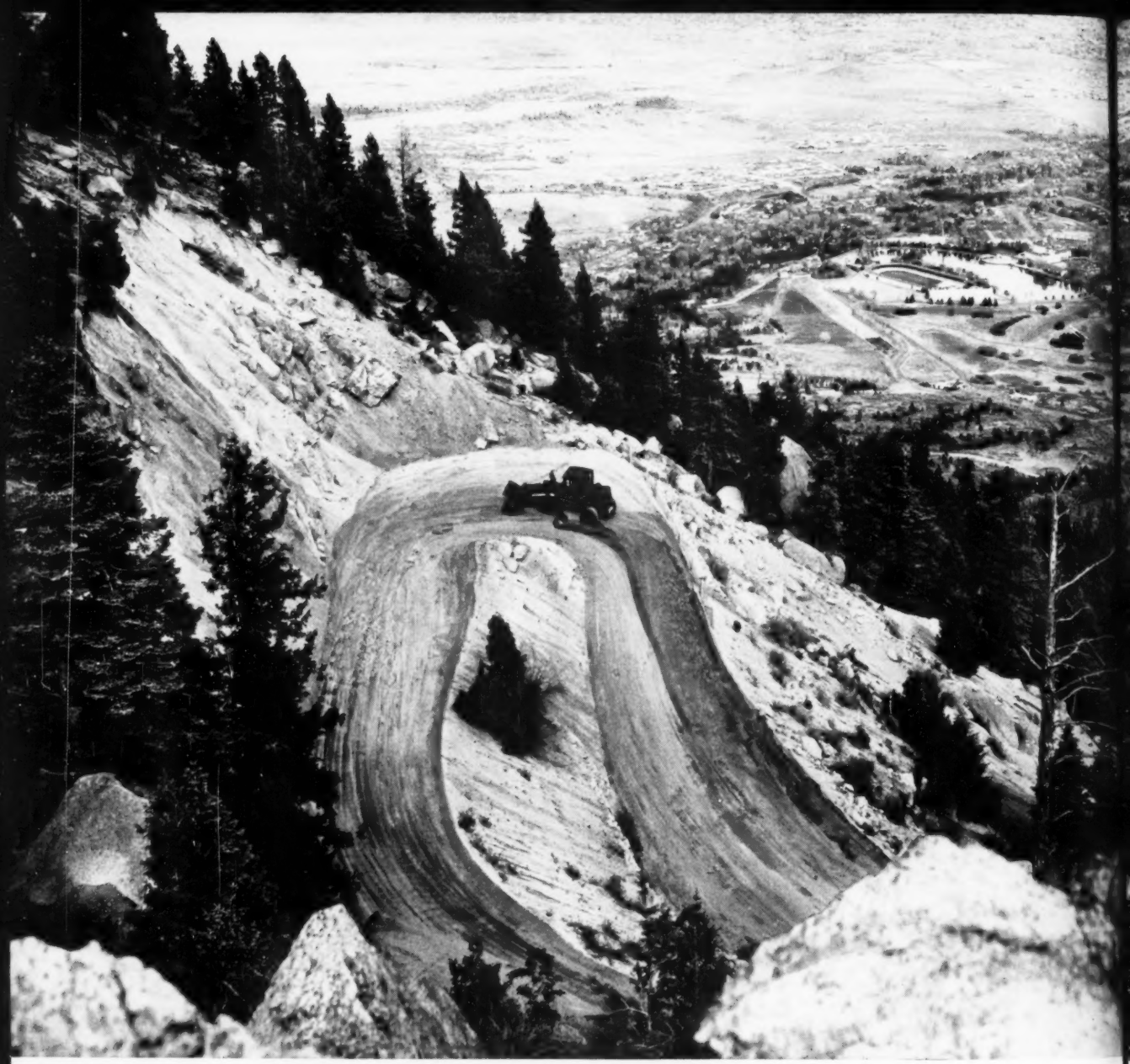
American
FORESTS
SEPTEMBER 1954 50 CENTS

NORTHWEST ANNUAL MEETING ISSUE



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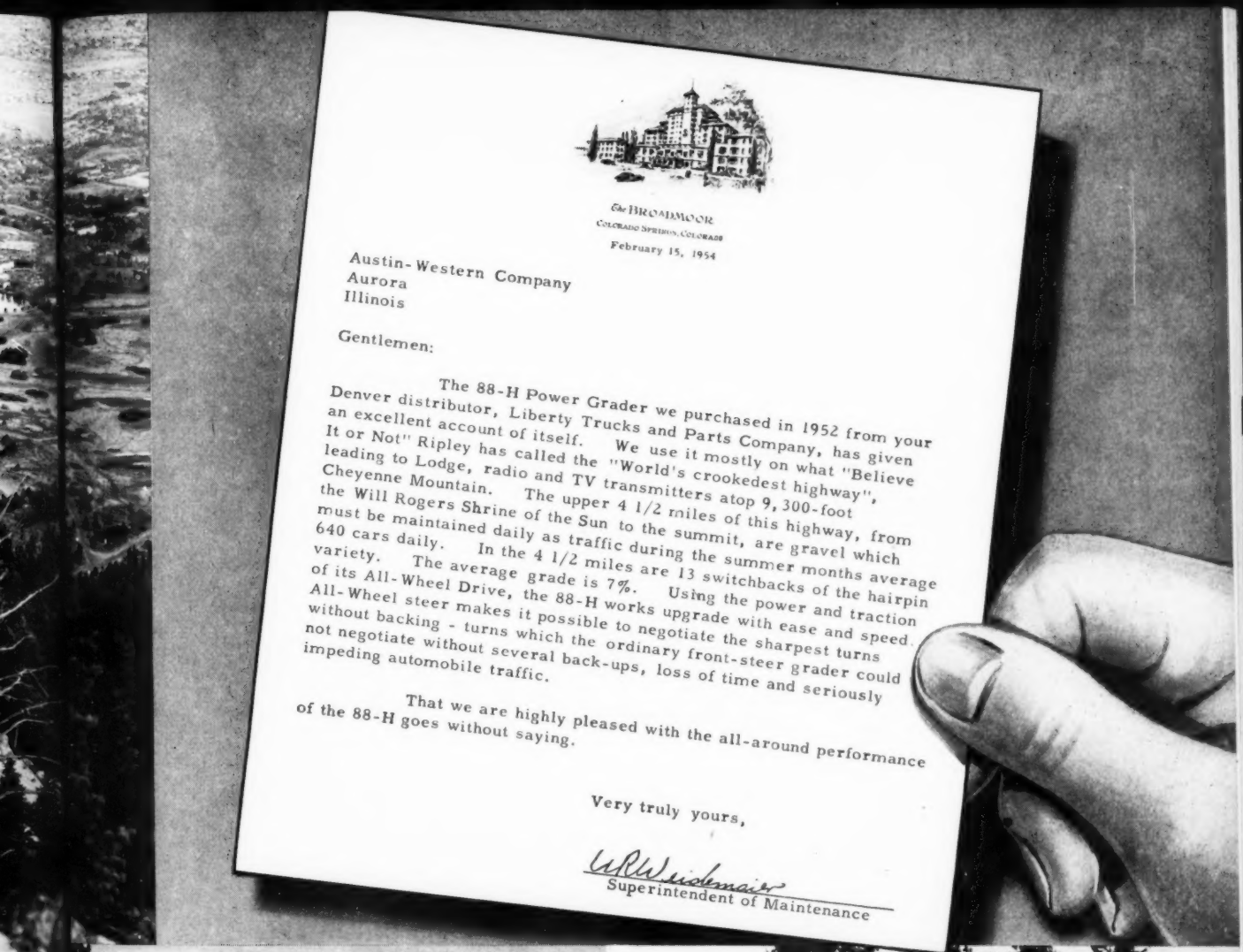
The BROADMOOR
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February 15, 1954
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Gentlemen:
The 88-H Power Grader we purchased in 1952 from your Denver distributor, Liberty Trucks and Parts Company, has given an excellent account of itself. We use it mostly on what "Believe It or Not" Ripley has called the "World's crookedest highway", leading to Lodge, radio and TV transmitters atop 9,300-foot Cheyenne Mountain. The upper 4 1/2 miles of this highway, from the Will Rogers Shrine of the Sun to the summit, are gravel which must be maintained daily as traffic during the summer months average 640 cars daily. In the 4 1/2 miles are 13 switchbacks of the hairpin variety. The average grade is 7%. Using the power and traction of its All-Wheel Drive, the 88-H works upgrade with ease and speed. All-Wheel steer makes it possible to negotiate the sharpest turns without backing - turns which the ordinary front-steer grader could not negotiate without several back-ups, loss of time and seriously impeding automobile traffic.
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Superintendent of Maintenance

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Volume 60
No. 9
September, 1954

American FORESTS

James B. Craig, Editor
Dorothy B. Thompson, Editorial Assistant
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COVER • *Yes, our September cover is enough to make a sportsman's mouth water. But there's a story behind that covey of quail that has just been flushed in Stan Galli's painting. It's a story of balanced land use and how modern-day Tree Farming in the Pacific Northwest is fitting into a land use pattern that gives solidity to the economic fabric of the whole area. In the Northwest, land use is the deciding factor in determining what lands are to be placed under forest management. The land that is selected for growing trees as a recurring crop is predominantly hilly, remote, or otherwise unsuitable for any other use. When surveys show that sections of these areas are more suitable for agriculture than Tree Farming, it is the policy of such firms as the Weyerhaeuser Timber Company to make these lands available for ordinary farming. The result, as Mr. Galli's painting shows, is managed forestland and managed farm land.*

(Cover courtesy of the Weyerhaeuser Timber Company)

THE AFA

The American Forestry Association, publishers of AMERICAN FORESTS, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and their part in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

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Letters

"Bug-aboos" in the Bushes

EDITOR:

Your timely editorial in the July issue concerning the amended version of S. 2548 is most helpful. The "foot in the door" objection which has been picked up, iterated and reiterated by many uninformed persons has absolutely no validity. As a matter of fact, the grazing use of the national forest not only has its "foot in the door" under the Granger-Thye Act but the door is wide open.

The sections of this Act giving special recognition to the grazing use, providing for National Forest Grazing Advisory Boards, requiring the Secretary to appoint such Boards as the official representatives of the grazing use to which must be referred upon request any matter pertaining to "1) the modification of the terms, or the denial of a renewal of, or a reduction in, a grazing permit; or 2) the establishment or modification of an individual or community allotment," and further requiring the Secretary, prior to the issuance of any regulation affecting the grazing use upon national forests to refer such proposed regulation to the local Advisory Board of each area that will be affected, and providing that if any recommendation of the Advisory Board is "over-ruled, disregarded or modified," the Secretary or his representative shall furnish in writing to such Board his reasons for such action, certainly give preferment to the grazing use over all other uses, which do not enjoy any such rights.

I had received and very carefully analyzed the statement by the Forest Conservation Society of America which you published in the July issue long before I had fully made up my mind upon the bill. I find nothing in their statement which, in my opinion, has any foundation as an argument in opposition to the bill. Since the bill deletes from the appeal provisions any appeal from an order by the Secretary made for the protection of the forest range for the purpose of "preventing injury to such lands or to change the use of such lands," this provision will automatically eliminate from the appeal section nearly all of the conflicts between grazing permittees and Forest Service administrators.

Apparently, quite a number of organizations took a firm position against the bill when it was introduced and, despite the fact that the bill has been rewritten to meet their objections, they are unwilling or unable at this time to change their position. In my opinion, unreasonable opposition to the enactment of fair and just legislation concerning the national forests by conservation organizations upon untenable grounds stultifies the influence of the conservation movement and its supporters. I am hopeful that the Congress will not be influenced by imaginary defects in the proposed legislation. It is very easy to conjure up "bug-aboos" in the bushes which do not exist.

Hugh B. Woodward
Regional Director,
National Wildlife Federation
Albuquerque, New Mexico.

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All through the timber country a new breed of pioneer is appearing: the "woodlot owner," or independent Tree Farmer.

On his own land he plants trees, grows them as a crop. In so doing he helps to prevent soil erosion, maintain the water table, conserve wild life and beautify the country.

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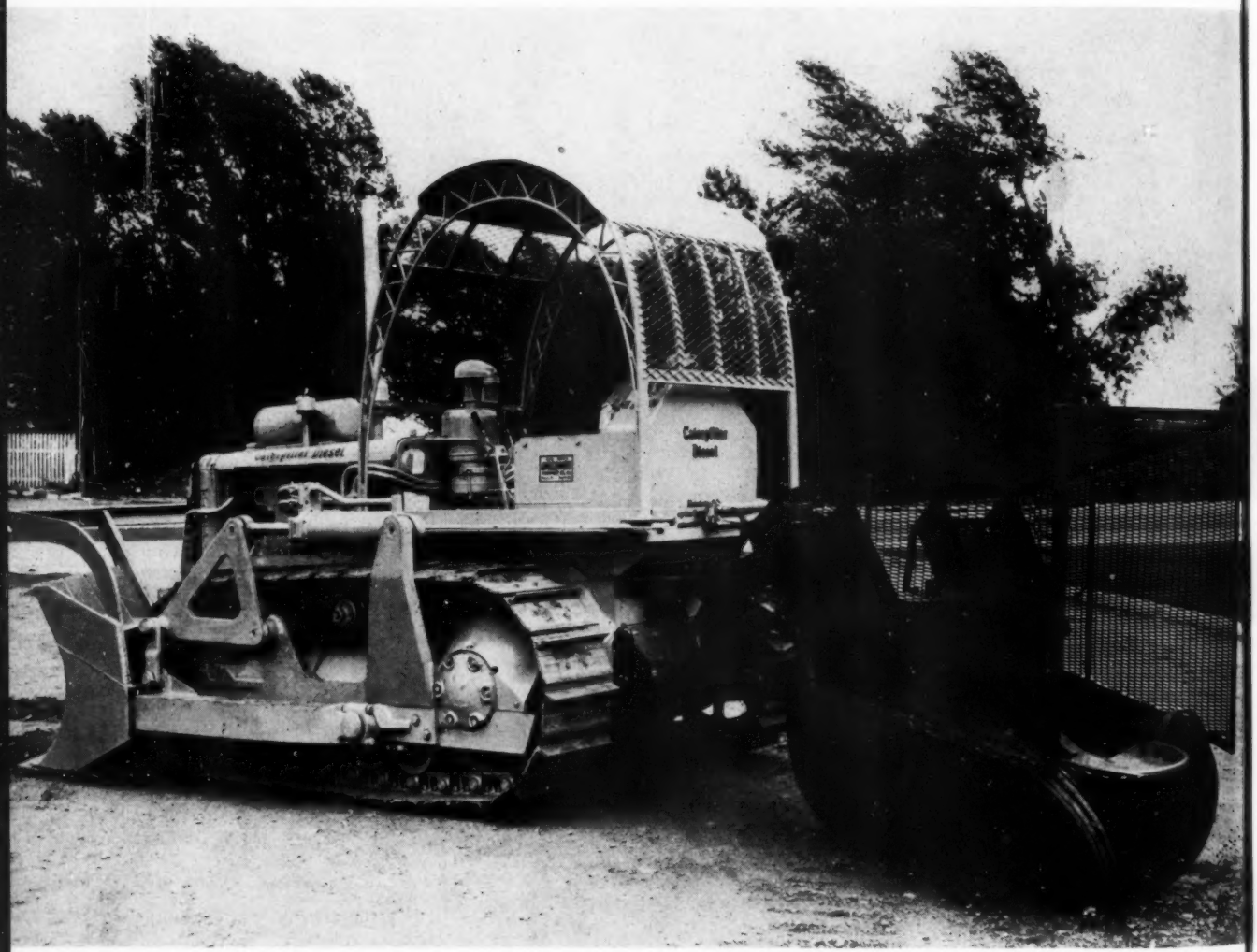

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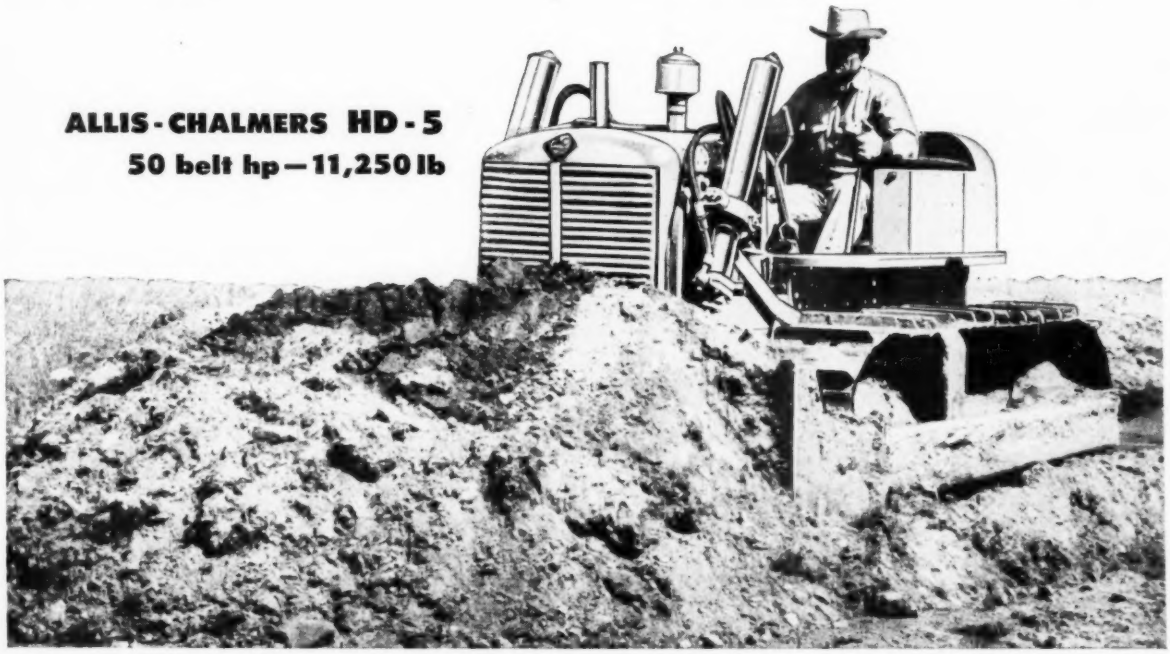

In its weight and power class, only the Allis-Chalmers HD-5 crawler gives you a tractor that is new in design and built with bulldozing in mind — with a main frame that is designed for front-mounted equipment, built-in provision for hydraulic pump, reduced front-end overhang, and better over-all balance. That is why the HD-5 does more work in its power range — at a lower cost and with less down time.

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BEAR AND CUBS in old burn on a western tree farm. The new tree crop will not mature for nearly 100 years. When all near-by seed trees are burned such areas must be hand-planted with seedlings from industry nurseries.

Keep America Green . . . it is important to everyone

Western red cedar provides a durable and weather-resistant exterior for this home. Wood's many species can be used inside or out to create a home of beauty and charm.

When a forest burns, everyone loses. Large quantities of both wood and wildlife are destroyed. Burned areas are no longer useful for recreation or as a habitat for game. Much wood that people could have used in the form of lumber, plywood and cellulose products is lost forever. Today, such losses are being reduced because the public is exercising more care . . . and by cooperative fire prevention programs which are maintained by private industry, federal and state forest agencies.

On industrial tree farms, fire prevention and control is an important part of forest management planning. Tree farmers build and patrol many thousand miles of fire-access roads to protect their timber. They invest millions of dollars in modern, mechanized equipment, radio communications and the training of personnel to fight forest fires. America's tree farms are the world's best-protected timberlands.

Today, about 31 million acres of tax-paying forestland are managed as tree farms by more than 5,200 private owners. All timberlands owned by this company are operated as tree farms. *Write us at Box A, Tacoma, Washington for a free booklet,* ***Tree Farming in the Pacific Northwest.***

Weyerhaeuser Timber Company

By ALBERT G. HALL

THE SMALL WATERSHEDS BILL FOR FEDERAL COOPERATION WITH LOCAL groups in the planning and carrying out of works of improvement for soil conservation, as finally agreed to by the Senate-House conferees is substantially the Senate version. The conferees, however, struck out the Senate provision for Congressional approval of dams having a capacity of 2,000 to 5,000 acre-feet, but substituted therefor a provision barring appropriations for plans which include structures with a capacity of between 2,500 and 5,000 acre-feet unless approved by the Senate and House Committees on Agriculture. The compromise bill also allows the Secretary of Agriculture to proceed on applications of local organizations unless they have been disapproved by the authorized state agency or governor within 45 days after submission. Until July 1, 1956, the Secretary of Agriculture may contract for construction of works of improvement in those states in which local organizations do not have contract authority.

A CONSERVATION BLOC IN THE CONGRESS, COMPARABLE TO THE FARM BLOC and other organized groups for the promotion of programs and support for special aspects of government activity, has been proposed by Representatives Johnson of Wisconsin and Metcalf of Montana. The issue that raised the suggestion of the bloc is the failure of the federal government to utilize fully the receipts from federal duck stamps for acquisition of refuges. It is reported by Representative Thompson of Texas, author of the last increase in duck stamp costs, that of over $35 million collected in duck stamp sales that less than 10 percent has been spent for the acquisition of lands for refuges, while most of the money went for development and maintenance of refuges, research, enforcement of regulations, and for waterfowl surveys, rather than for acquisition—activities that the embryo bloc indicates should have been financed by direct appropriations.

CONSERVATION LEADERS THROUGHOUT THE COUNTRY HAVE BEEN SENT questionnaires by the special committee on conservation and natural resources of the Commission on Intergovernmental Relations. The committee, headed by William S. Rosecrans of California, a past president of The American Forestry Association, is seeking opinion on federal aid programs in forestry and fish and wildlife restoration, water resources, flood control, stream pollution, etc. Federal-state cooperative programs in the field of natural resources have developed over many years, but this current study is the first over-all examination of their effectiveness and the need or desirability of their continuance. The results of the study will help guide the Congress and the Executive departments in future programming.

NEW CHAIRMAN OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS is Senator Guy Cordon, Republican of Oregon. He replaces Senator Hugh Butler of Nebraska, recently deceased. This committee has legislative jurisdiction over the Department of the Interior and its many activities in the management and disposal of federal lands and resources. In matters relating to natural resources, Senator Cordon has long been a prominent and vigorous leader.

FORESTRY ON INDIAN LANDS, NOW ADMINISTERED BY THE BUREAU OF INDIAN AFFAIRS, as trustees for the Indians, is gradually being turned over to the Indians themselves. Public Law 399, signed on June 17, provides for the termination of federal supervision over the Menominee Indian Tribe of Wisconsin, and sets a target date of December 31, 1958 for the completion of transfer to the tribe of all property, including forests, held in trust for it by the United States.

(Turn to next page)

Provision is made for the formation of a corporation or similar organization among the Indians if they so desire. A similar bill relating to the Klamath Indians in Oregon has passed the Senate, and several other bills relating to other tribes are before Senate and House committees. A total of 16,000,000 acres of Indian forests and woodlands are now managed on a sustained-yield basis, for the Indians, by the Indian Service.

THE OLYMPIC NATIONAL PARK CONTROVERSY OVER THE QUESTION OF whether or not the park should be reduced in size has been returned to Washington, D. C. for an answer. A committee appointed by Governor Arthur B. Langlie of the state of Washington has urged that the Secretary of the Interior, with the concurrence of the Secretary of Agriculture, designate two or more men of national standing in civic or land-use planning to study all aspects of the Olympic National Park and to make specific recommendations to the Secretary of the Interior. A minority report, signed by five members of Governor Langlie's 14-member committee, recommends leaving the park boundaries unchanged.

RESOURCES FOR THE FUTURE, INC. WILL SOON HAVE READY for distribution the printed copies of its report on the Mid-Century Conference held last December. Most of the 400 to 500 pages of the report will consist of excerpts from the discussion record, especially those dealing with policy and experience examples, rather than the full text of papers. All material being printed will be checked by those to whom the excerpts are attributed; thus, the book will be a reference work presenting a wide range of viewpoints on long-range resource issues.

NATIONAL FOREST MANAGEMENT, ORGANIZATION, FISCAL POLICIES, timber sales procedures, forest landownership, insect and disease investigations and control, and public relations matters were discussed in July by representatives of the forest industries and various members of the Department of Agriculture, including Assistant Secretary J. Earl Coke, and U.S. Forest Service Chief Richard E. McArdle. The conference was arranged by the forest industries as a follow-up to an earlier one dealing with technical problems of the industry and the Forest Service. As in the case of the earlier conference, it is anticipated that the policy meeting will create a better understanding of mutual objectives and the means of reaching them.

A NATIONAL POLICY FOR THE DEVELOPMENT OF WATER RESOURCES has been proposed in two bills (S. 3606 and H.R. 9585) by Senator Martin of Pennsylvania and Representative Miller of Nebraska, introduced late in the session. The bills embody current recommendations of the Water Resources Policy Committee of the National Water Conservation Conference. Purpose of presenting them at this time is to permit review of the proposed legislation prior to the introduction of new bills in the next Congress.

THE PRESIDENT'S ADVISORY COMMITTEE ON WEATHER CONTROL, authorized by Congress last year, has received $120,000 to finance a study of weather modification experiments. In addition to the agricultural benefits that may derive from controlled precipitation, there is the possibility of the use of weather control to aid in forest fire prevention or control. A project now under way in the Northwest may develop a means of predicting the development of fire-starting (lightning) cloud formations, and of dispersing such formations before they become dangerous. This project is being handled by the Forest Service, the Weather Bureau, and a private organization.

THE AGRICULTURAL CONSERVATION PAYMENTS PROGRAM for the current fiscal year provides for federal cost-sharing, or payments, for such forestry practices as thinning, pruning, girdling of undesirable trees, reforestation and fencing, when protected from fire and grazing. The Forest Service is charged with developing specifications for the forestry practices, for providing technical assistance, and for checking on the actual practices by landowners.

THE LONG-AWAITED "OMNIBUS" RIVERS AND HARBORS AND FLOOD CONTROL BILL, H. R. 9859, emerged from the House Public Works Committee on July 12. The Committee, which previously had approved all its provisions then voted formally to report it July 13. The measure authorizes 140 new Army Engineer projects, including modification of many old projects, at a total estimated cost of $822 million.

EDITORIAL

Forestry's "Big Three"

Forestry has three big goals today. These are the "Big Three"—the chief objectives set up in AFA's new Program for American Forestry that last month received the overwhelming endorsement of the membership. Just to refresh your memory, these goals are: 1) To meet the essentials of forest protection; 2) To improve the national timber crop in volume and quality to a degree sufficient to wipe out all deficits and build up a reserve; 3) To obtain the maximum of economic and social services from our forests by realistic application of the principles of multiple use.

These giant goals, with their accent on forest land management, represent the meat in the program. Every other item in this forestry constellation, little stars lighting the pathway to success, evolves around the orbit of the "Big Three" in further defining how the most important things may be achieved. And the achievement thereof is certain to require the continuous best efforts of all of us for the rest of our natural lives. In brief, our targets have been assigned. The time has now come to test the caliber of our ammunition.

How can AFA zero in all its guns on these major objectives to achieve maximum effect? To review the program, it will be recalled that the Higgins Lake conferees noted that the solid foundation for forestry advance—the machinery for future action—has now been provided. The big job today is that of filling gaps, consolidating gains, improving methods, making adjustments and planning for the future. In other words, a Herculean assignment.

Take this matter of gaps, for example. A gap in a line can be a dangerous thing. When one develops between two infantry regiments on the line it presents crucial problems. Communications have to be re-established. Liaison must be provided. Intelligence reports must be crisply exact. Eventually, the gap itself has to be plugged if further advances are to be made. To do all of these things requires courage, know-how and above all, teamwork.

The framers of our forest program know that formidable gaps exist today in our line of forestry advance. The forest fire problem is still far from overcome. We've scarcely started on insect and disease control work. Big gaps exist in the forest management line. Forest research is still an infant. Forestry still has a tremendous job to do —one that will require all of our tenacity, know-how and a true cooperative spirit. And while we now have a cadre of well-trained forestry officers and non-coms, what they need, to tackle the job at hand, is a growing army of willing recruits.

AMERICAN FORESTS magazine is the logical communications link between our officers and non-coms working in forestry and the members of the general public whom we wish to enlist in our army. But to do this we must broaden the impact of AMERICAN FORESTS until it not only serves as a real communications link with the public but also serves as the intelligence section for all people on the firing line in the whole field of renewable natural resources.

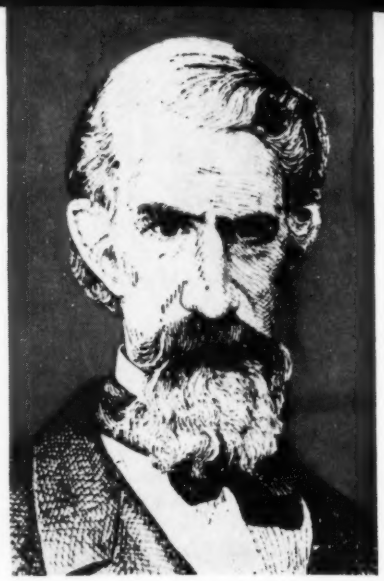
AFA also faces a challenging task in helping to plug the gaps that exist in our overall forestry pattern by working cooperatively with regional, state and local groups. Our meeting in Portland this month and another scheduled for Jacksonville, Florida, next year, represent steps in the right direction—this job of getting more people of all interests and experience together to see first hand what is going on in forestry. Even so, this alone is not enough. In tackling this task of plugging the gaps, a need exists today for a series of small, regional-type get-togethers—"Town Meetings" if you prefer—in areas where specific forestry gaps exist. Stressing the brand of cooperation it has practiced for 79 years, the AFA proposes to call a series of such meetings to focus attention on specific problems, consider what corrective measures should be applied, and then apply them.

Too ambitious you say? Perhaps, if you are one of the moaners at the bar who proclaims that conservation is going, going, gone. But not if you've happened to obtain, as we have, the full impact and power of a people's organization in action as attested by the hundreds of letters, postcards, wires and memos from members that accompanied their ballots on our forest program, plus 1000 more whose interest have been stimulated by the more than 1000 individual letters written to them this year by Executive Director-Forester Lowell Besley. These people want to help. They are eager to be called on. As one New England member wrote in the square for "comment" after applying his X to the right place, "And now go to it!"

The AFA and its magazine, AMERICAN FORESTS, intend to do just that. Conservation in this nation hasn't seen anything yet!

This year's meeting of The American Forestry Association is particularly significant. It marks nearly 80 years of conservation leadership

By W. B. GREELEY



Dr. John A. Warder, organized The American Forestry Association, was its first president

1875 EIGHT DECADES 0

FOR nearly 80 years, the meetings and programs of The American Forestry Association have recorded our national progress in forestry. The Association took permanent form in 1875, at a meeting of forest-minded men and women called to Chicago by Dr. John A. Warder, physician and horticulturist of Cincinnati. Within a few years, its general secretary, Bernard E. Fernow, was aggressively building public sentiment for state forestry commissions, state forests and better laws to control forest fires.

Soon the Association entered the national stage on its first platform of American forestry. This was the lineal ancestor of the Higgins Lake program approved by the members and now up for discussion at the annual meeting in Portland. The first step in national forestry proposed by the Association 70 years ago was to authorize the President to create forest reserves from the unreserved public domain. It was enacted into law in 1891 and President Harrison signed the first order creating the Yellowstone National Park Timberland Reserve.

From that time onward, every major step in national policy has had active and effective support from the Association—the creation of the Forest Service as a great administrative, as well as educational, agency in 1905; the Weeks Law of 1911; the cooperation of government with the states and private forest owners written into the Clarke-McNary Act of 1924; the federal charter of forest research enacted in 1928; the cooperative management of small woodlands expressed in the Norris-Doxey and later laws. Read the annals of the Association and you have the story of American forestry.

The last national platform for which the Association was standard-bearer was the Higgins Lake program of 1946. It followed an exhaustive study of the country's forest resources as they were left by World War II. This platform and the Forestry Congress which debated it had significant influence in confirming the federal policy of cooperation, leaving methods of controlling private cutting practices to the state concerned.

Before taking up the Higgins Lake Program of 1954, let us review for a moment where we stand 79 years after Dr. Warder's summons to Chicago. Through all the pressures of the democratic way of life and the occasional outbursts of sound and fury, we may trace three great forces which have molded American forestry as we know it today. The first was aggressive national leadership, exerted through the crusade of Theodore Roosevelt and Gifford Pinchot, through impressive National Forests and a great federal Service. The second was the spread of forestry outward and downward under the cooperative impetus of the Clarke-McNary Act and the resources and initiative of the states which that legislation brought into play. The third is the high tide of commercial forestry which has rolled in since World War II and brought many new oppportunities for industrial timber cropping and wood utilization. These three sources of energy have been fused by a sort of national genius for cooperation and by our manifold agencies for education and interchange of ideas. The strength of American forestry lies in their fusion. It is hard to tell where the influence of any of them stops and that of another begins.

And so, unlike all its predecessors, the Higgins Lake conference of 1953 started off with a sense of accomplishment and stability in the forest situation. "The most urgent and critical steps," says its summation, "have been taken." Of course, there is still plenty to be done; but the old sense of "crisis" so general in former conclaves, of impending national disaster, was gone. American forestry has gained much under the momentum of public and private activities. It is moving into a "permanent integration in the American economy and structure of land usage." Let us then fill in the gaps, get down to cases, look ahead for the maximum of social and economic services from our forests.

To my thinking, the 1954 program

of The American Forestry Association is summed up in the single phrase "good forest management." Management in terms of more complete protection from all destructive agencies, more intensive production of wood to bridge the gap still remaining between growth and drain, management to put "multiple use" into the actual administration of forest lands and provide adequately for recreation and the conservation of water. Better management of American forests, more wood, more stable water supply, more recreation—that is the payoff on the patient efforts of the Association for 80 years. At the annual meeting this month, Association members will get the pulse of movement and progress in the forests of the Pacific Northwest in all classes of ownership.

For example, thanks to the 30-year effort of former Regional Forester, now Governor, Frank Heintzleman, the National Forests of Alaska are taking their active part in national wood supply. The opening of the 500-ton mill of the Ketchikan Pulp Company on July 14, with two other large enterprises in lumber and pulp manufacture also en-train, is taking Alaska out of "Seward's icebox" and giving her rightful stature among the productive forest regions of the world. And when we think of the conserving role of the Association in Alaska's troubled history, of the Pinchot-Ballinger controversy, and the attacks of Albert Fall upon conservation padlocks, this event also adds to our sense of accomplishment. It is particularly a tribute to the steadfast labors of the U. S. Forest Service in making sustained-yield management the cornerstone of great industrial investments for the utilization of public forests.

The National Forests of Oregon and Washington are also moving forward in wood production and technical management. Thanks to Congressional recognition of the necessity for access roads to reach inaccessible areas of public timber, another fighting plank of The American Forestry Association, these great federal woodlands are moving toward their allowable annual cut. And the unwanted timber harvest by windthrow and beetles is being more closely salvaged.

At Grays Harbor, we may witness an interesting union of sustained yield in public management with the stability of a large community of forest industries and payrolls. The allowable cut from the Southern District of the Olympic National Forest may be manufactured only at some one of the Grays Harbor mills. And on the west side of the Puget Sound, the government is linked with an industrial tree farm in a 100-year partnership for unified public and private timberland management. It too is pledged to the continuing support of local, forest-borne communities.

The northwestern states are making distinctive contributions to forest management, beyond their share in woodlot forestry and in providing planting stock for private landowners. Oregon's self-reliant assumption of the gigantic task of restoring the Tillamook Burn is giving the world another great example of engineered conservation. It is a supreme test of organized forest protection—of the ability of men and machines and a gridiron of firebreaks to control the unbelievable hazard created by 350,000 acres of dead forest. And it is giving forestry, the world over, a new and impressive tool—the *helicopter* for mass reforestation.

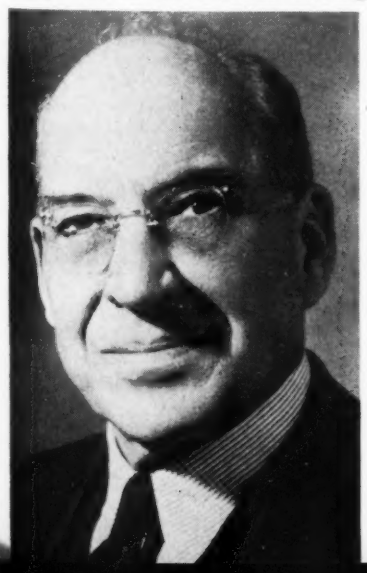
The example of Oregon has been followed by the state of Washington, who brings a hoary skeleton out of her closet. This is the Yacolt Burn, whose thousands of acres of white snags and dense brush memorialize a great conflagration of 1902, just north of the Columbia River. The Washington Legislature has ordered surveys and plans for the restoration of the Yacolt. Restoration! Management! Forestry is kicking off its swaddling clothes and getting down to business.

The spread of intensive management is evident on the industrial tree farms of the Pacific Northwest and in the manufacturing plants which they support. Its most striking feature is the union of intensive utilization at the mills with more intensive timber cropping in the woods. Each supports and advances the other. Probably the most dramatic single event in the last 15 years of wood use on the West Coast is the chipping of lumber and plywood wastes into good raw material for the manufacture of pulp and fiberboard. Probably 750,000 tons a year of these products are now produced from the leftovers that in former days largely went up in smoke in the great waste-burners that dotted our industrial landscape.

The widespread chipping of lumber wastes for pulping is an example of the correlated use of raw material which has become common in the Pacific Northwest in response to the post-war value of wood. Lumber mills have added insulation board, fiberboard, or pulp plants to utilize their former leftovers. *Salvage logging* has combed many thousand of acres of old slashings, recovering peeler blocks, low-grade sawlogs, pulpwood, shingle bolts, and whatnot. The reduction of Douglasfir bark into various useful fibers has begun. The last of our "weed trees," the red alder of the West, is finding its place among the assorted fibers used in the increasing diversity of wood pulps. The wood technologist calls the tune; the logging engineer and forester provide the materials.

ES OF PROGRESS 1954

Don P. Johnston, president of the AFA, will preside at the Portland meeting



Under state laws of Oregon and Washington, all commercial logging west of the Cascades must leave at least 5 percent of the standing timber in seed trees or seed blocks. In Ponderosa pine forests east of the Cascade Summit, the trees under 18 inches in diameter must be left, at any rate not less than four good seed-bearing trees per acre. The tree farms, which include most of the larger operations, go far beyond these minimum requirements of conservation. Typical old-growth logging in Douglasfir or West Coast hemlock is a hop, skip and jump affair. Sixty- or 80-acre patches of the heavy timber are cut clean, leaving solid banks of green forest around them. On large tracts, this process often results in working through the stumpage three different times, staggering the cuttings between strips of seed trees.

One of the disadvantages of staggered logging is greater wind-throw resulting from the long frontages of timber exposed to the assaults of Father Boreas. One often finds small salvage crews at work, following the storms and cleaning up blown-down timber. The practice is also growing of *pre-logging* the patches of old growth selected for clearcutting. The pre-logger takes out the understory of small trees and whatever windfalls or snags his machines can cope with. Pre-logging often recovers 10 or 12 thousand feet per acre of pulpwood, poles and small sawlogs that would otherwise be largely smashed up when the heavy stuff comes down and out.

One of the far-sighted tenets of modern forest management is *"Down with the snag."* Most virgin forests in the Pacific Northwest and much of its cutover land are cursed with old, dead, half-rotten trees. These relicts of an earlier day tower up into the canopy of a virgin forest and high above the green level of second-growth stands. They create probably our worst fire hazard. Any little ground fire will run up a weathered, barky snag and, with a puff of wind, jump over a road or fire trench and start a new conflagration. The fire which swept through the town of Forks, Washington—in the "wet" country west of the Olympics—apparently jumped two miles down the canyon of Clearwater River, *at 2 o'clock in the morning.* A violent east wind whipped up the blaze inside the trench of a "controlled" fire. The flames found a couple of old snags for a springboard, and the east wind did the rest.

The state laws of Oregon and Washington require the logger to drop the snags on his "show," up to the average number per acre established for his county. Here again tree farm operations have gone far beyond their legal obligations. Not only do all snags come down in their old-growth logging, whether yielding merchantable logs or not. Great areas of old cuttings and young forest have been worked over by skilled fallers with their power saws, putting down every dead tree or stub over 15 feet high. From the ridges and lookouts today you can often see square mile after square mile of reforesting land that is snag-free. And there is no sweeter sight to an old forester who, too often, has watched these blazing torches scatter sparks and destroy the gains from sweating hours of labor on a fire line.

Forest management in the Pacific Northwest is not forgetting our region's Number One commandment of fire safety. In 1953, the industrial tree farms spent an average of 48 cents per acre on fire roads, patrols, snag falling and fire-fighting equipment.

One of the most dramatic chapters in West Coast forestry since World War II is the spread of management to the "junior forests." It brings into play the most technical skills of the forester's art; and it also brings a new resource into the regional wood supply. This is the growing capacity of the soil and timber culture as a crop. Western Oregon and Washington add up some 12 million acres of "second-growth" forests stands from 20 to 80 or 90 years old. These trees have established themselves on old burns and areas of early logging, often on old fields and abandoned pastures. Many large timber holdings which supported pioneer sawmills have, thanks to a fortunate fire history and the reproductive power of fir and hemlock, regrown great stretches of dense young timber. And many of the scars and blank areas between them, left by fire, have been slowly filled in by planted trees.

West Coast seedlings and saplings usually take over the ground in dense, even-aged stands—thousands of them to an acre. In the resulting fight for light and growth, they are soon drawn into a fierce struggle for survival. The experts agree that from about 30 years of age to 90 or 100, an average acre of Douglasfir loses a cord of wood every year as the trees die from over-crowding. Danish foresters have capitalized on this characteristic of Douglasfir by planting 4000 seedlings to an acre; beginning to cut out the poorer trees at ten years, and thereafter thinning practically every succeeding year. Only 150 or 200 of the best and largest trees are left on an acre for the harvest cut at 80 years. The 80 year yield from such intensive management often exceeds 150 thousand board feet per acre; and over half of it is taken as they go in the yearly thinnings.

The next great advance in Pacific Northwest forestry will devise ways and means for "capturing" the natural mortality in our junior forests and holding or increasing their normally high growth rate during the decades from 20 to 80 years of age. Several tree farms and federal experiments are setting the pattern. It starts with *roads,* a network of permanent, ballasted roads. A mile of truck road may be needed to tap each 100 acres of young forest. The road is the heart of forest management.

After the road is built and landings made ready, a small contractor moves in with horses, small cats or rubber-tired tractors. With no construction work confronting him, he is content to cut only the 6 or 8 thousand feet per acre which the foresters mark for him. He is content to come again, three or four years later, and cut another 3 or 4 thousand per acre; and so on in a gradual process of stand improvement, recovery of trees doomed to die, and crown spacing to speed the growth and volume of the choicest trees which will be carried through to final harvest. It is a new game in the woods of the Northwest; and it is giving us a preview of the intensive management that will be common in another generation.

Experience with 50-year stands which have been thinned three times

in ten years indicates that on Site qualities II and III it is possible to bring the average net growth up to at least two cords (a thousand board feet) per acre and, year. Frequent thinnings should maintain this rate of wood production until the time for the last cut and start of a new crop.

The main question today about second-growth management on the North Pacific Coast is how much of the thinnings can be marketed? The region has a vast surplus of small wood. The pee-wee sawlog, cut from trees down to 12 inches on the stump, is generally in demand at milling centers. But the stick of pulpwood must compete with the pulp chip, which flows in constantly greater streams from the refuse rooms at sawmills and pilot plants. The expansion of pulp and fiber industries may ultimately bring a market for the millions of acres of young Northwest forests now begging to be thinned. Or some ingenious Yankee will invent a scheme of drying and baling pulp chips for shipment to hungry mills in the northeastern states. It is rumored that an experimental cargo of pulp chips has crossed the Pacific to Japan. At any rate, our woods practices and forestry-minded loggers are ready for the market, whenever it arrives.

There is still another exciting prospect for the long look ahead, so new that but few have yet grasped its potentialities. We are just to put to use the science of *forest genetics.*

There has been a good bit of tree planting and tree seeding in the Douglasfir region, on denuded forest land in all ownerships. Tree-farming paper and lumber companies financed the Nisqually Nursery, set up by the West Coast Lumbermen's Association in 1938; and have planted its output of 5 to 10 million seedlings every year. The planting of old burns on several tree farms has been completed; but spot planting now often follows the current logging where natural reseeding is not prompt or adequate. On the Olympic National Forest, where the best land grows 1,500 board feet to the acre, the Forest Service requires timber purchasers to plant immediately even the 40- or 60-acre patches clean cut in staggered logging and surrounded by seed trees. This choice timber-growing land, they believe, can not afford even a year's delay in starting another crop. Some tree farms are working in the same direction; and, with the expansion in the Christmas tree business, the demand for nursery stock continues to grow.

Large outlays all over the United States for forest planting (which exceeded 750,000 acres in 1953) and the research of forest biologists here and abroad are focusing attention upon the *source of the tree seed* now collected in prodigious quantities. Several years ago, the committee in charge of the Nisqually Nursery found that the highest survival and most vigorous plantations resulted from seed collected in the same locality where the new forest was to be grown. So each of the cooperating tree farms was asked to supply the seed for its own plantings—collected as nearly as possible from the same sites and elevation zones as the ground to be reforested. This was just the start.

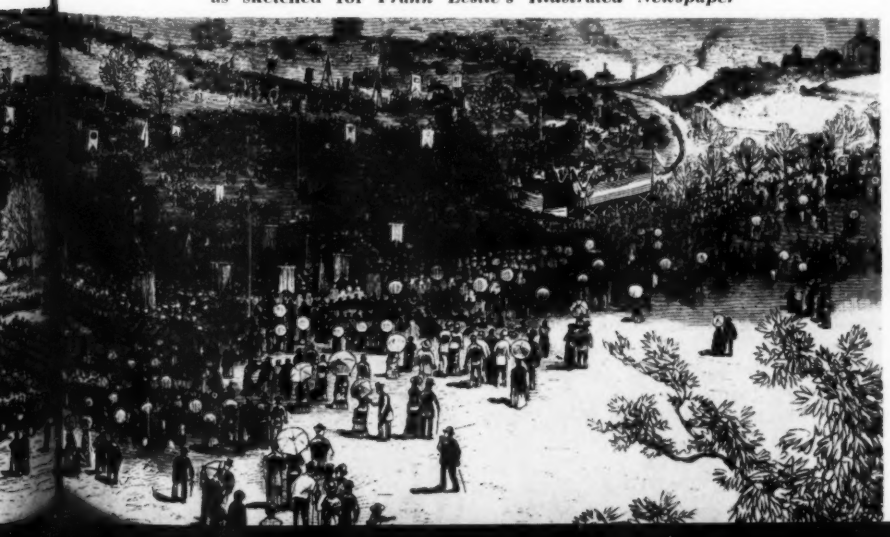
We have learned enough about different *strains* of our well-known forest trees, indeed about differing individual qualities in the same species growing on the same forty acres, to realize vast possibilities for tree selection and tree breeding in the forest practices of the future. The Institute of Forest Genetics at Placerville, California, was founded in 1924 by a Northwest lumberman, James G. Eddy of Seattle. He had unshaken faith that science can improve the trees of the forest as it has bettered the natural qualities of many farm and garden plants. The Institute, now operated as a federal experiment station, has opened the eyes of American foresters to differences between native strains of the same forest species. There seem also to be almost unlimited possibilities for selection and hybridization in producing new strains of rapid growth or resistant to disease.

We are content to leave to the future the more fantastic predictions of enthusiasts, like producing trees that are square-edged and limbless or growing 30 cords of poplar pulpwood to an acre in five years. But Pacific Northwest foresters and nurserymen are deeply concerned right now to discover the best plant material for their seed collections and selective thinnings. Instead of gathering cones wherever they may be found, our foresters will concentrate on *seed orchards,* selected for the best qualities in tree form and vigor. And then they will improve the progeny of the orchard by cutting out undesirable parents—trees of poor growth or form, the "school marms" with forked trunks, the "rough trees" covered with gnarly limbs. Indeed, they will search the woods in all directions for superior trees and graft their buds on the terminal shoots of youngsters in the seed orchard.

There were strange goings-on in some Douglasfir woods this last spring. Such as shooting off the terminal buds from lofty trees with a shotgun; and making grafts of them to implant in the leaders of prospective parents. Paul Bunyan never thought of that device for forest improvement. If he had, undoubtedly he would have loaded the gun with razor blades or mobilized all the *sliver cats* about the camp.

The interest in genetics is typical of the spirit of forest management abroad in the Northwest. It is on the march. It is ready to try anything that gives promise of better growth in the woods or better utilization in the mills. This dynamic quality is contributing more to the economy of the region in capital investments, new industries, new technologies and payrolls than was ever witnessed in the heyday of exploiting virgin timber. Our forests are more than just a "renewable resource." Forestry seems to possess some miraculous chain reaction that keeps spreading out in unforeseen directions.

Tree planting ceremony at first Forest Congress in 1882 as sketched for *Frank Leslie's Illustrated Newspaper*



Some say that Northwest forestry got its start from the awful lesson learned in one of America's most disastrous forest fires

The Yacolt Burn

DURING the blistering summer season of 1953, a party of agile young state of Washington foresters struggled through a 290,000-acre ghost forest north of the Columbia River, appraising the value of fire-killed tree skeletons to determine salvage possibilities. Some of the ghosts had been killed a half-century ago in one of America's greatest forest conflagrations.

The parching east winds which turn this "Yacolt Burn" into a fire-trap each season, assisted by blazing summer suns, kept daily thermometer readings above 90 and relative humidities in the low 20s. The survey crew rolled out at four each morning and were cruising by five. The mid-forenoon lunch was eaten in an uncomfortable few minutes, as there was no shade in the ghost forest and little water. By early afternoon, when temperatures had become unbearable, the foresters finished their day's work and headed for camp.

Timber cruising isn't child's play at its best, but in the Yacolt Burn it was really a tough job. In any direction selected the compass lines ran up and down mountansides and through shoulder-high bracken fern. Fire-killed windfalls covered the ground, and in places the vine maple and high huckleberry formed impenetrable thickets. Vast armies of flies added to the general discomfort.

Until the early fall of 1902 this rolling foothill country had been blanketed with one of the finest coniferous forests in North America, dotted here and there with ranches, settlements and small sawmills. Clearing and burning of forested land was considered the patriotic duty of all progressive settlers, and "clearing fires" were allowed to run wild unless they threatened farms or communities.

During the late summer of that disastrous year, continuous dry east winds lowered the humidity west of the Cascade Mountains almost to the vanishing point. Hundreds of smoldering brush fires crept into adjacent forests and raced through the tree tops. Before the uncontrolled flames burned out that fall, over 200 separate forested areas had been incinerated. Smoke clouds obscured the sun for weeks, cinders rained down as in a major volcanic eruption, and Northwest industry slowed down to a terrified crawl.

Pioneer towns were wiped off the map and hundreds of farms and sawmills were obliterated. In the Yacolt Burn alone over 20 villages and settlements were destroyed and the list of identified human victims was 38, with many more missing. The country was a maze of flame and smoke.

After the dead had been buried and the terrific toll of destroyed property had been reckoned, public sentiment toward forest protection changed abruptly. Citizens demanded the passage of state fire laws and the appointment of state foresters and fire wardens.

The exact extent of the Yacolt Burn, named for a town on the northwest border of the denuded area, covered 238,920 acres in Clark, Skamania and Cowlitz counties. No protection was given the healthy cover of reproduction which followed the fire, as the new laws and agencies were designed to protect property and mature timber. Young forest growth continued to be classified as

n Forest Graveyard

By DONALD H. CLARK

"brush," to be deadened and burned by "stump ranchers" to provide pasture for their few head of anemic livestock.

Under those conditions it isn't surprising that in 1917 the same area was visited by a fire which swept through 7,000 acres of young trees, also destroying mature timber which had escaped the 1902 blaze to the tune of a half-million dollars in value. Then, during the following summer, an additional 22,000 acres was reburned, largely due to the inflammability of standing dry snags from the 1902 fire.

In 1918, and again in 1922, fires swept over portions of the original burn and invaded adjacent timbered areas, denuding 22,000 acres and 5760 acres respectively. Fire lines were established again and again during each of these disasters, but brands from burning snags sailed over the cleared trails to start new conflagrations. The loss from these two fires was estimated at slightly over $2,600,000!

A combination of incendiarism and careless logging methods brought destruction once more to the area in 1929, a holocaust which almost rivaled the 1902 tragedy in extent. Burning for over a month, the flames swept through 227,520 acres, most of which had been previously visited by an earlier fire. One man was cremated, many others injured.

Less damaging, but nevertheless causing notable loss, was a fire in 1949 which raised the score to seven major visitations in less than half a century. As long as those dry, pitch-laden snags stood, the area seemed doomed to periodic losses.

During the active period of the

Civilian Conservation Corps, several camps were established at points in or adjacent to the Yacolt Burn. A major activity of these working groups, assisted by Forest Service personnel, was reduction of fire hazard in the burn by construction of access roads and by cutting fire breaks through the sea of snags.

All dead trees tall enough to spread fire were felled in corridors of several hundred yards in width, extending from ridge to ridge. Other fire breaks were cut along ridge tops where every snag, regardless of height, was taken down. It was extremely dangerous work, even for experienced woodsmen, and most of the CCC boys had never before handled an ax or crosscut saw. Many of them, in fact, had never been outside of large cities.

The older snags were so badly decayed that the tops would break off at the first blow of an ax. Large limbs, justifiably nicknamed "widow makers," were an even greater hazard. Crews consisted of three men: two to handle axes and saw, and the third to stand by and watch the tops and limbs for signs of weakness.

In an effort to minimize the accident rate among these inexperienced workers, a number of snags were taken down by drilling a series of holes around the up-hill circumference of the butts and shooting the trees off the stumps with dynamite. The method wasn't very successful, as the danger to workers in handling explosives was greater than that of working under badly decayed tree skeletons, to say nothing of the fire hazard created by the blasts. Due to employment of crews on other projects, and to the diversion of men and equipment to fight the devastating Tillamook fire in Oregon in 1933, no great mileage of snag breaks had been cut when the CCC camps were abandoned.

When World War II boomed the lumber demand, and when newly-established Northwest pulp mills clamored for wood, loggers started to investigate the salvage possibilities on the Yacolt Burn. Citizens and forest industries in southern Washington had been worried for many years by this sterile expanse of potential forest land which continued to be a total loss from the standpoint of timber production.

There had been little salvage of burned timber, as its quality had become so badly degraded by rot, checking and insect attack that loggers could operate profitably only by taking out the best trees from the most accessible areas during periods of high log prices. That situation continues up to the present time.

Weyerhaeuser Timber Company, which owns about 30,000 acres in the burn, has built miles of access roads, and has done a considerable amount of snag-cutting and planting by hand.

On 6000 acres owned by Crown Zellerbach Corporation, all snags have been felled, and log salvage operations have been active since 1950. Fire roads have been built and waterholes dug here and there. Where natural regeneration is lacking, Crown Zellerbach has planted over a hundred acres to Douglasfir and noble fir, and has seeded 456 acres to hemlock and Douglasfir by helicopter.

Washington state's Department of Conservation and Development has established a state forestry headquarters at Vancouver, 15 miles from the western border of the burn, to protect and rehabilitate state lands in the devastated area.

The young foresters who literally "sweated out" the summer of 1953 on the burn, were given that job by Washington's Institute of Forest Products at the urgent suggestion of the Vancouver Junior Chamber of Commerce, an organization which has vigorously promoted utilization of fire-killed timber on the Yacolt Burn. The Institute's function is to locate and publicize unused forest materials.

The survey's purpose was to carefully appraise the remaining values in snags remaining from the 1929 burn, as those obviously would contain more sound wood than the skeletons left by previous fires.

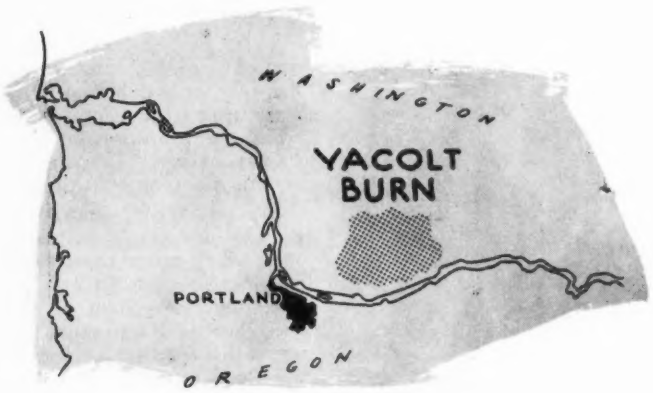
Recent air maps of the burn were used to identify the areas killed by the 1929 fire. George Stenzel, who teaches forestry at the University of Washington, and who planned the survey, found a sharp contrast on the air photos between 1929-killed trees and the older snags. Those killed in 1929 had retained their tops and large limbs, which gave a distinct "fox tail" effect in vertical photographs. The 1902-killed snags were almost uniformly topless and limbless.

Aside from measuring the volume of standing snags, the real job was to determine what proportion of that volume remained sufficiently sound for commercial use. That factor was established by studying the records of official scalers who were measuring and evaluating logs taken from the burn by several small logging operations. A deduction of 40 percent from the cruise figures was found necessary to compensate for the defects caused by decay, weather-checking and insect boring.

The 22,000 acres cruised averaged 17,000 board feet per acre in usuable timber. The experience of loggers indicated that logs with diameters of less than 30 inches could not economically be cut and removed. These figures show that the prospect isn't too rosy for salvage by conventional methods, and that such operations will be confined to periods when the demand for logs is strong and prices are extremely high.

Meanwhile, the Yacolt Burn remains a tinder box for several months of each year. In no area throughout the west are foresters and fire wardens more fire-conscious and alert.

Any who doubt the terrible efficiency of the burn's dry, pitch-laden snags in spreading fire from tree to tree over unbelievable distances and under any weather conditions, should dig out the records of a winter fire in the Yacolt Burn, now remembered only by older Forest Service employees. In addition to the usual hardships of fire fighting, the fire crews fought that fire on snowshoes!



Pacific Rim Forester

By JAMES STEVENS

On October 1, Clyde Sayers Martin will step down as forestry counsel for the Weyerhaeuser Timber Company. But this dynamic veteran has no intention whatever of retiring from forestry

FAR worlds of adventure and pioneering in forestry waited for Clyde Martin in his golden days of youth at Yale, in the years 1905-1907. But he was not dreaming then of elephant logging in the poon timber of the Madras Presidency. The Minnesota pines traced the horizon of his summer field work. In the Cloquet country, yet rich in virgin timber and the lusty life of frontier lumbering, young Clyde won his degree as axman. Once a swing went wild and he nearly slashed through his foot. The logging superintendent was another Jigger Jones. He thoughtfully immersed the Yale lad's foot in a bucket of "coal ile" to sterilize the wound. The treatment worked. Clyde Martin returned to Yale with no limp.

Then the wind-swept Douglasfirs that fringed the horizon of the North Pacific Coast began to beckon. A pioneer student of forest engineering, Clyde visualized a future for the practice of this new profession in the big timber of the Northwest Corner. So he wrote to General Manager George S. Long of the Weyerhaeuser Timber Company at Tacoma, offering to try his hand at no cost to the company until he had demonstrated his worth. He was given a trial chance. It was a tough haul upward and on to the payroll. But there was "Clyde Sayers Martin," on the books before the summer of 1907 was done, with a rating of "compassman and woods timekeeper," and the pay was good—for those days.

As this is written the names of 142 technically trained foresters are on the books of the Weyerhaeuser Timber Company, including ten research specialists—one a soils technologist, two of them forest entomologists. When Clyde Martin was a lone forestry pioneer with the company he needed the equipment of a surveyor and woods engineer to make the grade. And it was this part of his technical training plus help from experienced woodsmen and logging engineers that made him an American pioneer in world forestry, a developer of natural resources for the people of India and the Andaman Islands—a true "Pacific Rim" forester of exploration and achievement.

"C.S.M." was born in Waynesburg, Pennsylvania, September 19, 1884. His father was Charles Alexander Martin, an educator who went to India in 1880 to teach in a boys' school. Clyde was graduated from DePauw University, Indiana, as a Bachelor of Science in 1905, and from Yale Forestry School with an M. F. in 1907.

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When bark has been skinned from entire log by high pressure jets of water, all of wood not converted into lumber or plywood can be salvaged for chips

. . . . . OPERATION

By ARTHUR W. PRIAULX

ALL along the Pacific Coast and even back into the Idaho panhandle, the talk today is about chips. The blue chips of the forest products industry are golden yellow wafers of wood. They flow in an endless stream from 150 sawmills and plywood plants, by-passing refuse burners, on their way to the region's wood-hungry kraft paper mills.

By special open-topped boxcar, by fast-moving truck and trailer and by clumsy, tug-propelled barges and hulks, these fabulous wafers are on the move.

Here is one of the great conservation stories of the decade. It is the amazing account of the virtual revolution in the raw material supply of a dozen giant kraft paper mills which hungrily devour about 3000 tons of wood fibers every 24 hours. Operation chips is a salvage operation so mighty as to save 18,000 acres of virgin timber each year, and give a needed "stretch" to the wood resources of a region which is battling to tide over its sawtimber wealth and its 12-billion-foot annual wood-using industry needs until the millions of acres of growing young second growth can take up the full load.

Operation Chips is a four-year-old industrial wonder baby. It's the old Cinderella story all over again. And it has jarred the pulp industry back on its heels, it has come so fast.

Today, the West's mighty kraft paper industry is getting fat on a diet made up of crumbs and leftovers from the sawmill and plywood "table." More than half of the wood needs of the kraft industry—1500 tons a day—comes from bark-free edgings, trim, slabs and plywood tailings which are carefully collected and chipped at more than 150 sawmills and plywood factories.

A spirited fight for this rich new vein of wood is being waged by the industrial giants of the paper and

More than half the wood needs of the Northwest's kraft industry, 1500 tons daily, comes from bark-free edgings, trims, slabs and plywood tailings—golden wafers of wood

CHIPS

pulp world whose plants are scattered throughout Oregon, Washington, Idaho and California.

This drama all started about ten years ago during the last days of cheap timber. The war brought production problems to the woods which put log value and log supply in an entirely different light. Pulp mills began casting about for new sources of wood. Stumpage prices, which sometimes reached $60 a thousand board feet, were forcing pulpwood costs beyond the profit line. Some paper mills started experimenting with a slab de-barker to make use of sawmill waste, for bark is the ever-present curse of the pulp maker.

Old-time pulp men looked on sawmill scrap and leftover as devil's children. They claimed you couldn't get uniform chips from this light stuff. They didn't have machinery to handle it at the mill. Not a few saw doom written in a bold hand.

Sumner Iron Works, at Everett, Washington, came up with a new small chipper which would handle this odd-shaped refuse and small stuff and would make even-sized chips. Chemicals dissolve even-sized particles of wood and at the same rate of speed without damage to cellulose, thus insuring best possible quality pulp. The company even designed a slightly different chipper for plywood plants to handle the lightweight fishtails and other plywood trimmings. The new devices were slow to catch on, and only a few were installed.

About four years ago, stumpage prices were still headed skyward, when word spread through the Douglasfir region that one of the nation's largest pulp and hardboard manufacturers from the east was privately surveying the available supply of leftover wood at sawmills and plywood plants. In fact, representatives were reported to be offering long-term contracts for wood.

That report set off a wooden gold rush. Western kraft manufacturers suddenly leaped into action. Maybe they had been overlooking a too obvious source of raw material well worth corralling. They quickly sent agents into the field to tie down all possible sources of supply.

Most attractive locations for chippers were at sawmills and veneer plants close to pulp mills. These choice prospects were called on first and sewed up. Agents were given considerable latitude. They offered to buy the chipper plants outright for the sawmills, then lease them and let the chips pay out the original cost. Or, they helped the mills finance the chippers, which cost from $15,000 to $75,000, depending on capacity and the conveyor system needed to carry the whittled-up wood to rail siding.

In the space of two years, more than 100 of these chipping plants were installed. Then the pace slowed down as pulp mills exhausted more desirable locations.

After a hiatus of more than a year during which time only a few of the chippers were installed after the original mad flurry, there is now a renewed interest evidenced by the kraft mills in further expanding this source of chip supply. Both Sumner Iron Works and Oregon Steel Foundry Company in Portland, developers of a new type chipper blade, report orders on hand for several chippers and a considerable number of interested queries. A number of the large kraft manufacturers say they plan to contract with more sawmills to increase their wood supply from leftovers.

The chipping machine consists of a very heavy steel wheel into which from six to 18 blades have been installed. The wheel is turned at a very high rate of speed and the chunks of wood, or in the case of the whole log, the full log is fed down an incline chute. The rapidly rotating blades chip the wood into even-sized pieces about five-eights of an inch long. The chips are sorted in screen hoppers, with fine material falling through, and the splinters

(*Turn to page* 54)

As much as possible, chips are handled by gravity when transferred from storage bins to cooking vats at beginning on journey through kraft mill

U. S. Forest Service photos

Mount Hood National Forest, named after Oregon's tallest snowcap, is a winter sports mecca for thousands, with skiing the prime favorite

MOUNT Hood National Forest, named for Oregon's tallest snowcap, is in the truest sense a "people's forest," perhaps unequalled among America's timbered preserves for its diversified contribution of natural resources.

Millions enjoy its inspiring scenery every year; hundreds of thousands depend on its pure waters, the electricity its rivers generate, the timber trucked from its woods, the cattle grazing its meadows, and many lesser riches that make this forest a prime example of multiple use.

Looming but 50 miles east of Portland, 29th largest U.S. city, Mount Hood looks down in all directions upon miles of Douglasfir or Ponderosa pine turning dusty blue in the distance.

Wild as this expanse may seem, the forester, engineer and builder have to a surprising degree tamed it and put it to work. The Mount Hood forest's 1,108,000 acres, though larger than Rhode Island, stand only 70th among the 151 national forests in area.

Yet in revenues to the U.S. Treasury it ranks a proud third on the basis of $3,426,000 returned in fiscal 1953. The top two also are in the Douglasfir belt, but neither is as diversified. Here's a rundown on the Mount Hood's multiple-use cornucopia:

1. Timber. Available commercial timber is estimated at 21,000,000,000 board feet, which is fifth high in its region. The foresters figure 242,500,000 board feet can be cut annually without reducing timber-growing capacity or interfering with other important uses. That would build 26,000 houses a year.

Last year loggers took out 223,000,000 board feet, much closer than most western national forests have come to full harvest.

2. Water supply. Streams of this forest furnish 60,000,000 gallons or more of water daily to homes and industries of 550,000 people in Portland and several smaller cities below its perimeter.

3. Electric power. Private utilities have harnessed its rivers with four dams where turbines develop 120,000 or more kilowatts that serve more than 90,000 homes and hundreds of businesses.

4. Recreation. The Mount Hood's busy rangers claim No. 1 rank for the millions it serves. They estimate 6,328,200 visited the forest last year, nearly four times the Oregon population. Most were highway travelers, but even so about 1,227,000 used its facilities in summer, and 201,000 were lured to its seven winter sports areas, among the country's finest.

Trout fishing ranks second only to skiing in the sports field, as rainbows, cutthroats, Eastern brook and steelheads lure 50,000 or more anglers a year. And hunting for deer, elk and bear brings in another 6000 nimrods.

5. Irrigation. Its streams and lakes are made to irrigate more than 40,000 acres on some 1800 farms. This has a far greater potential, as western populations continue to rise.

6. Lesser benefits. About 1500 cattle graze on the Mount Hood's meadows under permit, and one small cinnabar mine is producing quicksilver. Both grazing and mining have declined in the past decade or two.

This rare combination of talent and beauty found in the Mount Hood is most quickly comprehended from the air. So let's take an imaginary cruise by airplane.

A mere 15 miles from the edges of metropolitan Portland with its 700,000 people, our plane crosses the forest boundary. Spectacular scenery

Magnificent MOUNT HOOD

By MERLIN BLAIS

claims all our attention at first. As we approach the forest's snowy sentinel, the 11,245-foot Mount Hood seems not so remote as before.

To our north is the mighty Columbia river, second largest in the nation and first in its hydro-power potential, emerging from the east through its famous gorge cutting through the Cascade range. But we swing southward to cover the forest by circling the peak counterclockwise.

Soon we note a lake and dam. That's the Bull Run, an odd name for the source of the pure water Portland brags so much about. Bull Run lake has not only national forest protection, but is backed by a watershed reservation of 138,220 acres set aside by Congress 62 years ago.

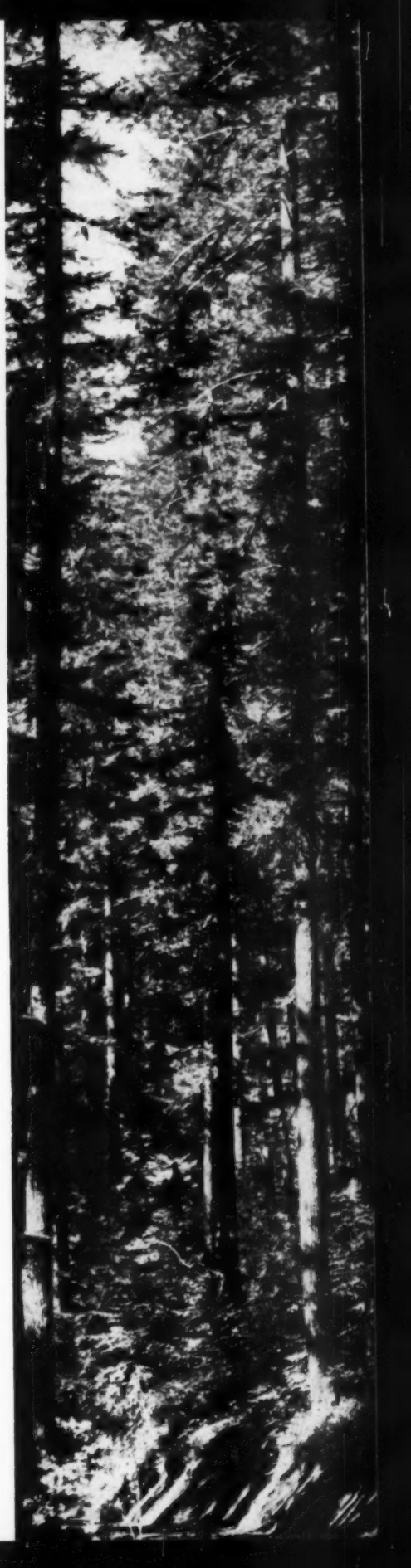
More than 4,000,000,000 feet of timber is in that reservation, and it presents a worrisome protection problem during the usually long summer fire season. This watershed has few roads, so fire fighters must pack in many miles. But the city of Portland and the Forest Service are working now on a better protection plan.

We wing southward across the twisting Sandy river and come upon the Clackamas drainage. Mount Hood is to our left rear, the broad Willamette valley far to our right. The Clackamas is the pride of its foresters—and the Mount Hood's real money-maker. With the adjacent Sandy it has 420,000 acres of commercial timberland containing around 14,214,000,000 feet of timber.

Those bare patches lying on the green slopes like mange on a dog's back attest to the logging harvest. Cut in staggered settings to assist natural regeneration from untouched adjacent stands, the timber yield reached its all-time peak on the Clackamas last year, 113,500,000 feet.

This sold for $2,187,100, three-fifth's of the entire forest's intake. The Clackamas came within 1,500,000 feet of its allowable annual cut under the agency's sustained-yield program. It's one of the areas that contradicts now at least industry's charge that national forests are failing to provide their share of the wood needed in the U.S. economy.

From our plane we locate the roads on which scores of logging trucks thread their way out to saw-



Virgin Douglasfir along the Oak Grove Ranger Station Road in Mt. Hood Forest

mill dumps or rafting booms. Most of the logs are being hauled 55 to 65 miles out. Even the several sawmills at Estacada, five miles west of the forest boundary, are as much as 30 miles from the logging "sides" as the falling crews bite deeper toward timberline.

Nearly two-thirds of the logs are going into the Willamette river, some to be rafted as much as 80 miles downstream to mills along the lower Columbia river. Two paper mills at Oregon City take much of the pulpwood, some of it on trades to Crown Zellerbach. Several medium-size sawmill's operate around Portland.

The Mount Hood's westside logging area, which takes in the Sandy and Clackamas drainages, contains more than four-fifths of its timber. About three-fourths is Douglasfir, one-fourth hemlock and pulp species.

Those giant logs, one to a truck, that are seen in photos from the Pacific Northwest are not common here. The Dwyer Lumber Company, Portland, recently hauled out a whooper eight feet thick at the butt. The 34-foot log still was 67 inches through at the top.

Butt logs more generally run 26 to 30 inches. They come from a beautiful stand that is mostly 200 to 275 years old, so dense and free of defects that it runs as high as 80,000 to 100,000 board feet to the acre. The Dwyers recall patches going as high as 120,000.

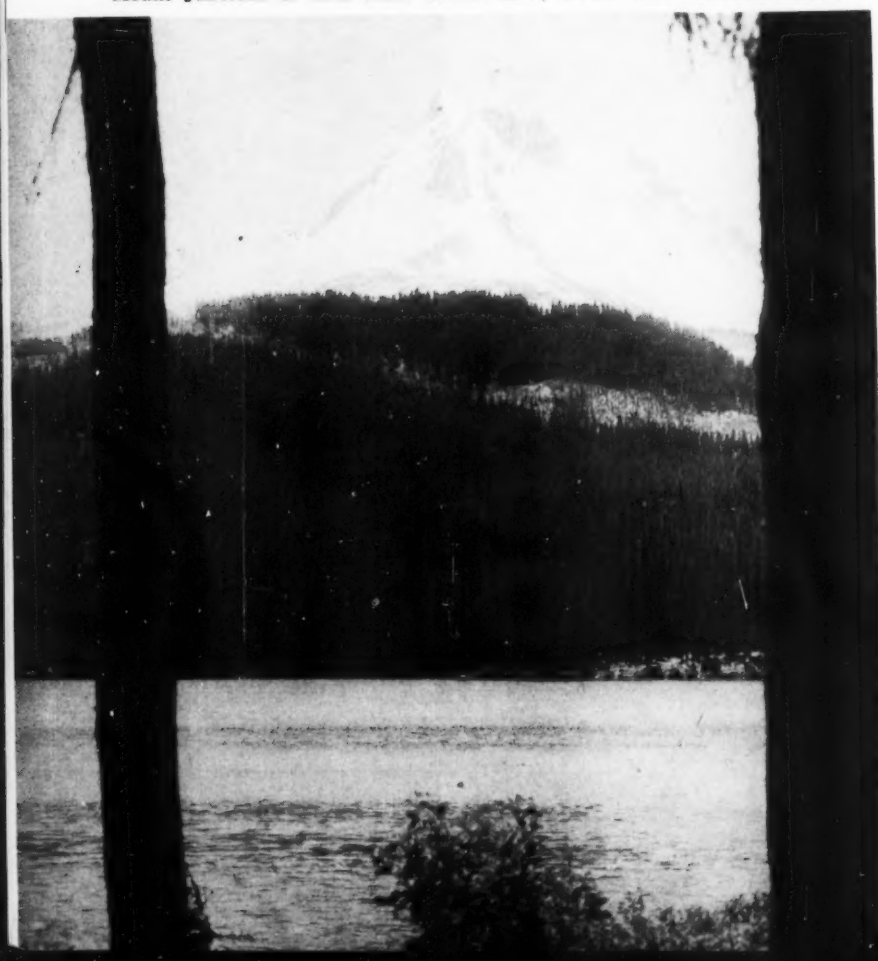
The consistently high overrun was largely responsible for an upward readjustment of timber estimates on the Clackamas and Sandy by about 4,000,000,000 feet.

Almost hidden in the folds of the mountains are the series of dams on the Clackamas from which Portland General Electric Company, one of the two major power utilities in the area, draws much of its electricity.

PGE has built three dams over many decades and is building a fourth this summer closer to the headwaters as a storage dam to firm up power plants downstream in low-water months.

The Clackamas, too, is the best of numerous trout fishing streams in the Mount Hood forest. And the foresters estimate 50,000 or more anglers try their luck in their domain every year, with numbers steadily rising.

Mount Jefferson as seen from Olallie Lake, Mount Hood National Forest



Cognizant of this popularity, the Oregon game commission plants more than 200,000 legal size trout on the forest annually, all in the upper reaches of the streams because the fish tend to move downward.

The hatchery-bred plantings are of rainbow and Eastern brook trout in the main. The cutthroat is doing pretty well naturally. The Clackamas once was noted for its salmon runs, but the power dams, heavy fishing and pollution downriver reduced them to mere hundreds.

Hopes for restoring the salmon runs have risen, however. Federal and state fisheries agencies are working with the power company on radical changes or replacement of fish ladders over the dams and ways to divert ocean-bound fingerlings from the turbines. Screening is a tough problem where drift is so heavy. A rotating screen is proving successful at PGE's dam on the Sandy river.

One fisheries authority termed the Clackamas the finest tributary in the entire Columbia river system for spring Chinook salmon, and some estimate its spawning grounds could accommodate as many as 40,000 a year.

Our pilot turns southeast and noses up for more altitude. Rising straight ahead is craggy Mount Jefferson, the forest's south sentry, only 750 feet lower than Mount Hood. A lonely wilderness area with subalpine timber and several score of small lakes spreads out toward the ridgepole of the Cascades. For many miles man's only mark is his trails.

These lakes are the stage for the state's strangest fish planting operation. Nearly 60 lakes are stocked every year with more than 150,000 fingerling trout—from the air without benefit of parachute. A Piper Super Cub does the job in two or three days that formerly took weeks by pack horse and mule.

Fledgling fish are dropped free into the air from 200 to 400 feet off the lake. The fingerlings may be stunned for a moment, but survival is remarkably high. The high country gets about 10,000 fish big enough for the creel, too, these going into the Olallie lake area close to Jefferson, which can be reached by road.

Our plane is in a line now between the peaks of Hood and Jefferson, just about 51 miles apart, and almost before we know it we've dipped into the pine country, largely a high plateau which receives far less rainfall than the west slope fir area. We cross a large corner of the Warm Springs Indian reservation and must fly north 15 miles to cross the east-

west boundary into the national forest again.

Logging trucks are running eastward to such mill towns as Maupin, Tygh Valley, Pine Grove and Dufur. Selective logging is general here for Ponderosa pine is predominant. This general area has about 4,870,000,000 board feet of timber.

Irrigation has been developed for some 40,000 acres. Rock Creek reservoir is the biggest project, serving Tygh Valley. Several other lakes and streams are being used. Further development is likely in coming years.

The timber opens up for numerous meadows and we sight cattle grazing. About 1500 are under permit now. At one time as many as 24,000 sheep grazed also, particularly on the old burns. But this dwindled for lack of herders during World War II, and in many areas brush has grown up.

Deer and elk are more numerous on the east slopes, particularly around White river at the northeast corner to our right front. Six thousand or more hunters a year stalk the Columbia black-tailed, white-tailed and mule deer, Roosevelt elk and black bear.

Nature's balance supplies predators, too, the cougar, wildcat, wolf and coyote. Fur bearers include the red fox, marten, mink, badger, ermine, otter, skunk, raccoon and muskrat, though they cannot be described as plentiful.

Back on the Clackamas big game is sparse where thick timber chokes out forage. Sportsmen, in fact, describe some sections as "biological desert." But the patchwork logging will bring on an increase in deer and other creatures, as it opens lands to grass and brush while a new stand of conifers is taking hold.

In the White river area the big problem is lack of winter forage. Snow drives the deer down into the valleys where they invade farm lands. The state of Oregon is endeavoring to acquire 17,000 acres as a winter preserve, so the deer herds can increase to several thousands and provide 500 to 700 a year for "cropping" by hunters.

The gray and white cone of Mount Hood again is close on our left, and we veer toward the long slope on its southern flank. This is the Timberline winter sports area, most popular of the seven in the forest which attracted an estimated 209,000 last year. Virtual traffic jams are not uncommon on the better week-ends.

We catch sight of Timberline lodge at the upper edge of the thinning woods. Built on heroic scale at the 6000-foot level by the WPA and dedicated by Franklin D. Roosevelt in 1937, the lodge is open the year around with private operators. An excellent six-mile road links it with Government Camp, village on U.S. Highway 26, and it is kept open though snow plows cut an alley 20 feet deep in places.

Sihalie Falls, a landmark of the Forest

A tramway with a bus-like conveyance on cables also connects the two. On the ski slope a chair lift nearly a mile long carries skiers to the 7000-foot mark. The rustic lodge can house 230 guests.

Other ski spots, such as Multorpor and Tom-Dick ski bowl, have rope tows and shelters. The Pacific Northwest has 16 major winter sports areas on national forests, but Mount Hood draws two-fifths of all the visitors.

Spring calls a halt on the slats and snowshoe crowd, sometimes as late as July 1, but summer brings out many more, an estimated 1,227,000 last year, as sightseers, campers, hikers and picnickers. Sixty-one forest camps are heavily used all summer.

Most of the estimated 6,328,200 forest visitors last year were using the highways, particularly transcontinental U.S. 30 through the Columbia gorge, which we shall see in a few moments, and U.S. 26, fastest motor route from Portland to California, which crosses the forest diagonally.

Counting a fourth of a day for those just passing through, the Mount Hood still figured 2,594,200 man-days spent in its scenic confines. Indeed, this is a people's forest.

As our plane pulls abreast of Cooper Spur we sight down lovely Hood River valley, famed on its lower slopes for apple and cherry orchards, many of them irrigated from the forest streams.

Timber on the mountain's north slope is mixed, but Douglasfir is dominant. Nearly all private timber on this drainage has been cut, and the half-dozen mills of the valley compete strenuously on federal sales. The federal stand has been estimated at 2,600,000,000 board feet, but is being resurveyed and may be boosted 20 to 25 percent.

The U.S. agency has taken on an unusual cooperative job here. Hood River county owns more than 28,000 acres of tax-foreclosed timberlands,

Logging trucks using one of the access roads through Mt. Hood National Forest

which it shrewdly has asked the Forest Service to manage. This violated the prevailing principle of returning such land to the tax rolls regardless of price, but the county is netting a tidy $25,000 or more a year.

Concerned about its timber supply, the Hood River community petitioned for a federal sustained-yield unit, such as those in effect for the

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A Lament for Things Gone

By STEWART HOLBROOK

THIRTY-three years ago, having worked all winter in a northern New England logging camp, I went to Boston to get my teeth fixed, then in a jovial moment purchased a fine derby hat and, for reasons I have never fathomed, bought a round-trip ticket to Vancouver, British Columbia. I soon sold the return half of the ticket, and went to work in a big high-lead camp up the Fraser River. The derby was more durable than the ticket. Three years later, I nailed it to a Douglasfir stump and took off for Oregon, which I have since made my home.

Now I am an old settler, a man out of Genesis, for I can recall when Northwestern loggers preferred Copenhagen to cigarets, when fallers and buckers used crosscut saws, when steam did the yarding and loading, and logs came down the mountain behind a shay that rocked and rattled and had a voice to frighten a cougar in the last 40 of the most remote quarter-section. I thought then it was a great and wonderful era. Thirty years later, I know it was.

I do not mean that its technology was efficient, or that its social consciousness was other than medieval. It was wasteful of timber. It was dangerous to human life. It was thoughtless and careless, breeding hatred and wobblies, spawning fires and untold acres that are still desolate. The whole rip-snorting shebang was inane, often cruel, always costly from the viewpoint of society. I loved every last bit of it, not for anything it accomplished, but because it was the greatest industrial show in North America; perhaps anywhere.

The era I am celebrating did not come to an end with a bang. Eras seldom do. They overlap. For instance, when I was working at a camp with the latest thing in high-speed steam donkeys, snaking logs high in the air between spar trees, other camps nearby might be yarding along the ground with a surviving Dolbeer, or using a skid road with horses, or even hand-logging with peaveys and jacks. Meanwhile, in the western pine region, men were loading sleighs house-high to move logs to the snowbound landings, then chasing them down-river in the classic drive; while other men were rolling their logs into flumes that wound through the forest like elevated railroads to the mills. And at one and the same time, still other pine operations were using high wheels with brand new tractors for motive power.

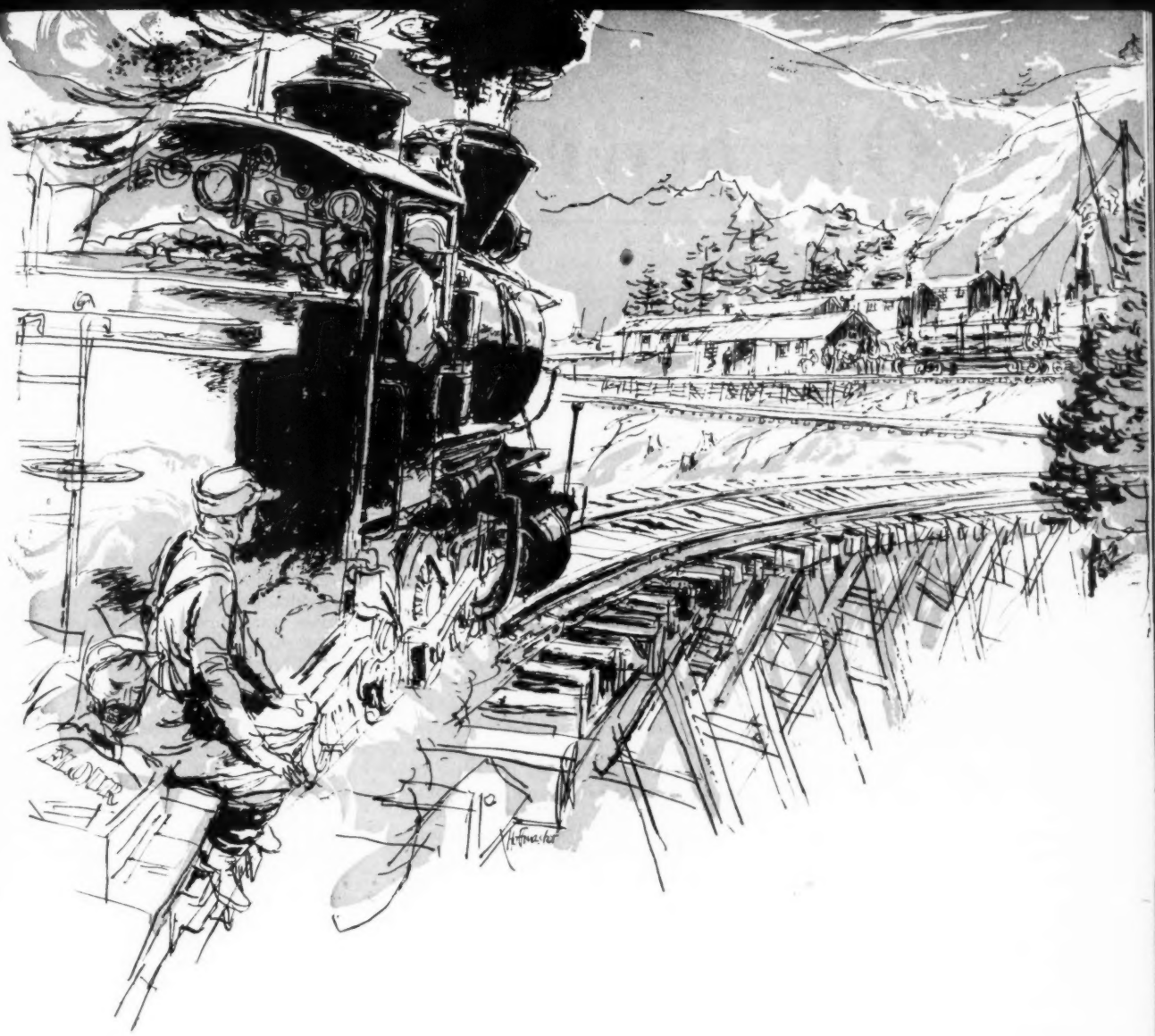
While all these things were going on, back in the 1920s, I used to hear gray old bullcooks, bewhiskered as Moses, curse the "modern" methods, the age of steam in the woods, and weep for the days when bull teams lurched down the skid roads lowing and grunting, and the bullwacker cried aloud in protest to a God who had made such miserable oxen. In *that* great time, it seemed, men had been men; but my own generation, together with its methods of logging, were a collection of punks and trick machinery.

So, memory gives me pause when I look around today to see how little has survived of the "modern" methods I knew only yesterday—which in reality was a third of a century ago. The railroads were the first to give way. I kept a record and it tells me that between 1920 and 1934, I rode the locomotives or the cars of 292 privately-owned logging railroads in one province and four western states. How many remain, I do not know, but a vast majority of them have gone where the skid roads went. The internal combustion engine is doing their work, and I say a pox on it. Trucks are machines as efficient as they are dull to contemplate. Locomotives are living animals which breathe, snort, sweat, shiver, which have voices to warn and demand and protest, or simply to exult with the joy and pride of being a steam locomotive, hence a sentient thing.

The great pounding steam donkeys, too, were driven out by the internal combustion engine fed on gasoline or diesel oils. When the old-time whistle-punk yanked his wire, the donkey responded with a cry of a quality to alert the most sluggish mind. And when it was running, it emitted sound and smoke and steam cinders in satisfying profusion. The diesel donkey is small, smooth, quiet: even its whistle a mild beep. It required three, even four, men to handle a big wood-burning steam donkey. One operator keeps a diesel donkey busy. There can be no argument, save on the ground of aesthetics, and aesthetics have no place in industry.

A few years ago, trees were felled by muscular men who stood on springboards notched in their trunks high above the forest floor and pulled the long shining blade of a crosscut; and bucked into suitable lengths with the same sort of tool. Fallers and buckers were in my time mostly of Scandinavian origin—big, blond men with magnificent, sweeping moustaches who worked by the bushel, inch, or mile, as piece-work was known; and often carried a Little Red Card indicating membership in the IWW, though they absolutely refused the wobbly doctrine that piece-work made the boss richer than did his wage slaves.

In its era the logging camp was a wonderful place. If you know of a surviving example of the genuine article, go see it, for it may be your last chance



Then the chainsaw was perfected. The labor shortage during World War II brought it to the camps, quickly and almost universally. It did away with what we used to call the Swedish Fiddle. I do not happen to know anybody in the woods who regrets the passing of the crosscut saw. The chain-jobs are infinitely faster, easier to operate, and their use had also tended to leave less stump. They are charged with starting more forest fires than seem necessary, but the record improves.

Almost as new as the chainsaw is the company forester. He began to appear in the 1920s on rare occasions. To most logging bosses he was no more welcome than mumps. Not because he harassed the loggers; he was not permitted to do so, but he was an "educated" man. He knew a whole raft of fancy names for pine, fir, and hemlock. He talked about "sites" and "cycles;" he called common evergreens "conifers;" and he held dangerous theories among which was the proposition that, given a chance, a forest would renew itself. For a long time the forester was merely tolerated. The production man was the hero of the logging woods.

Meanwhile, time was taking its toll of the old-style operators, men to whom a standing, living tree was revolting evidence that their employees had failed to let all available daylight into the swamp. They died. The forestry schools meanwhile had gone about their work more subtly; they started turning out graduates who were not only foresters but production men, too. One by one these capable young men have been getting jobs. Their number is now imposing. So is their influence. They are bringing to fruition the hopes of generations of honest conservationists, many of whom would not understand that sound forestry, if ever it came, was to be based less on the emotions than on economics. Even so, the forester-logger, along with the tree farm and keep green movements, could never have come into being without the radical changes that have taken place in the idiotic and confiscatory tax structure which bedeviled American timberlands.

These young logger-foresters were quick to adopt the new techniques which I have mentioned, and many other things dealing with straight

(*Turn to page* 86)

Is Olympic National

YES says E. T. Clark

YOU can have your cake and eat it is a keynote which may well apply to a discussion of the Olympic National Park. In other words, it is possible to have a large and marvelous park fully up to park standards without locking up, as in a museum from all but limited recreational use, over 10 percent of the commercial timber of western Washington. Hence, the answer to the title of this article is *"YES."*

It seems entirely possible without acrimony or intolerance to study this matter factually and arrive at an affirmative answer through detailed analysis of the revelant considerations.

The initial consideration naturally would be the present size of the park. This is now given as 896,660 acres, or 1401 square miles. This vast size was accumulated by various procedures. The Mt. Olympus National Monument of about 320,000 acres was, by the Wallgren Act, reconstituted the Olympic National Park, and was increased to 648,000 acres by transfer from the Olympic National Forest. This act was approved June 29, 1938 and carried a provision authorizing additions up to a maximum of 898,292 acres. Additions have been made to nearly this total by Presidential Proclamation, and by acquisition and condemnation from private owners of the Queets River Corridor to the Pacific Ocean and the Ocean Strip extending northward about 50 miles along the coast.

The size of the park is difficult to visualize without some comparisons. It is larger than the state of Rhode Island which contains 1214 square miles. It is 25 percent larger than Shenandoah, Mammoth Cave, Rocky Mountain and Mount Rainier National Parks combined, which total 1140 square miles.

Its area is equivalent to a strip one mile wide stretching across western United States from Vancouver, British Columbia to 250 miles south of the Mexican border.

Another consideration is the enormous volume of timber included in the park. Based on a 1953 investigation, the state of Washington Institute of Forest Products gives the commercial volume of timber as 18,690,089 M board feet. It has been estimated that 389,000 acres of the park are high, barren, mountainous areas or land with sub-alpine forest of value only for recreational use. This commercial timber volume, therefore, stands on the remaining 507,000 acres. It is all old-growth timber with species as follows: Douglasfir, 31.5 percent; spruce, 4.7 percent; cedar, 7.2 percent; hemlock, 36 percent; true firs, 18.5 percent; pines and hardwood, 2.1 percent. Some of it is very high quality, particularly the Douglasfir and spruce. Much of it is overmature and consequently, in some areas there are great accumulations of windthrown timber. Underneath the trees there is a semitropical jungle of undergrowth.

To visualize the volume, some comparisons again are necessary. If all of this timber in the form of logs was loaded onto railroad cars, the solid train would reach seven times across the United States on the route from Seattle to New York City. These logs, in the form of lumber, would build almost two million two-bedroom houses. An experienced cruiser on the Olympic Peninsula will require a day to cruise the timber properly on 80 acres. At this rate, and working 250 days a year, to cover the commercial timber would require 25 years. How many years would it take a tourist to get onto every 40-acre tract?

A third consideration is the loss to the economic life of the Olympic Peninsula area, comprising communities entirely dependent on timber for their existence. In other words, the effect on John Johnson, the local forest worker, who each morning picks up his dinner bucket, kisses his wife and kiddies and goes into the forest or mills to earn their living. The Institute's report shows 12,434 of these forest workers in 1952 producing logs, pulp and paper products, lumber, plywood, veneers, doors and shingles in the logging operations and forest industry plants which ring the Olympic Peninsula. These workers account for 54.8 percent of the employment of the area. They support the other 45.2 percent engaged in trade, transportation and other services. The forest industries of this area produce goods valued at $232 million. The annual pay roll is $57 million and taxes to the state and local governments total $4 million. If we are to continue the stable economy in this area, we must have sufficient commercial forest lands under forest management to establish an operating cycle which will give continuous employment to the forest workers.

The volume of commercial timber in the four counties of the Olympic Peninsula area, remaining at the beginning of 1953 exclusive of the park, was 50,118,800 M board feet in private, state, county, municipal and federal ownerships. The volume of logs used by the forest industries of the Peninsula area in 1952 was 1,206,300 M board feet. The logs harvested in 1952 from the area was 967,385 M board feet, which shows a deficiency in logs of 239,000 M board feet. Hence, there was an appreciable difference between usage and harvest which had to be made up by salvage in woods and manufacturing plants and, principally, by importation from outside the Peninsula. However, traditionally, the manufacturing plants on the east side of Puget Sound have imported logs from the northern and eastern forests of the Peninsula. At the same time, the allowable annual cut on

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Park too Big?

NO *says Irving Clark, Jr.*

OLYMPIC National Park, established in 1938, has a total area of almost 900,000 acres. It is not, as some of its opponents have claimed, the largest national park. Among all American and Canadian parks, it is the 12th largest. Of the parks and monuments in our own system, it is the eighth largest. The Province of British Columbia, adjoining the state of Washington, has a *provincial* park system almost as large as the entire national park system of the United States.

The issue to be discussed here—whether Olympic National Park is too large—can be considered either from the point of view of the conservationist or from the point of view of the lumberman. Unfortunately, the latter group has only begun to overlap the former in very recent years. From the point of view of the conservationist, the approach to the question is positive—the park is not too large in terms of the resources it is designed to protect and the purposes it must serve. From the point of view of the lumberman the approach has, over the years of this controversy, been primarily negative; the argument has been that the park must be cut back because local needs for timber require the utilization of standing timber within the present boundaries of the park. Present demands of the lumbermen are for about 250,000 acres, less than one-third of the whole park. but more than one-half of the heavily-timbered areas.

Finally, the question can be discussed on either a national or local level. It is most important to remember that Olympic National Park is truly a national park, owned by all the citizens of the United States. For this reason it seems appropriate to discuss the question of its size from the viewpoint of national welfare, whether the considerations under discussion are esthetic or economic. With this in mind, consideration will be given to the positive aspects of the question: Is Olympic National Park too large?

The system and concept of national parks is a very old one, going back to the time of President Lincoln, under whose administration the first such park was established. It is worth noting that the preservation of wilderness areas has been a preoccupation of a majority of our strongest Presidents, of both parties. Both Lincoln and Theodore Roosevelt were vitally interested in this problem, as were, later, Woodrow Wilson and Franklin Roosevelt. Realization of the unique values of the area now in Olympic National Park came as early as the late 19th century. A man considered by many to be our greatest author - naturalist, John Muir, visited the area in 1896, and was moved by the unique beauty of the Rain Forest as he had only been previously by his own beloved Sierras.

At this time, a half century ago, the state of Washington existed almost exclusively through the logging industry, which effectively dominated the state both economically and politically. Yet even then a strong movement arose to establish a national park on the Olympic Peninsula. In 1904 Representative Francis Cushman of Washington introduced a bill into the 58th Congress to create Elk National Park. At that time all national parks were administered by the United States Forest Service. Only two years later, in 1906, another bill was introduced into the Congress to create a forest reserve—in effect of wilderness area—of three-quarters of a million acres within the Olympic National Forest. Favorable committee reports were made on both of these bills, neither of which passed.

No understanding of this whole question can be had without a consideration of the utterly different purposes for which the National Park Service and the United States Forest Service have been established. Legislation respecting both national parks and national forests is found in Title 16 of the United States Code, significantly entitled "Conservation." Legislation authorizing the President to establish national forests was first enacted in 1891. A statute passed in 1897 defined the purposes for which these forests should be established, as follows:

"No national forest shall be established, except to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States; but it is not the purpose or intent of these provisions . . . . to authorize the inclusion therein of lands more valuable for the mineral therein, or for agricultural purposes, than for forest purposes." Title 16, United States Code, Section 475.

The significant phrase within the quoted sentence is "to furnish a continuous supply of timber for the use and necessities of citizens of the United States." In other words, national forests exist primarily to be cut down for timber. Those who argue for the transfer of any part of Olympic National Park back to national forest status, citing the excellence of Forest Service camp sites and recreational areas, are simply losing sight of this basic purpose for which all national forests are maintained. And even if transfer to Forest Service jurisdiction would accord these timberlands some protection. the history of steady reduction in size of Olympic National Forest, for the last half-century, should discourage the sincere advocates of this transfer.

In absolute contrast to the quoted language is the wording of the statute, found in this same title of the

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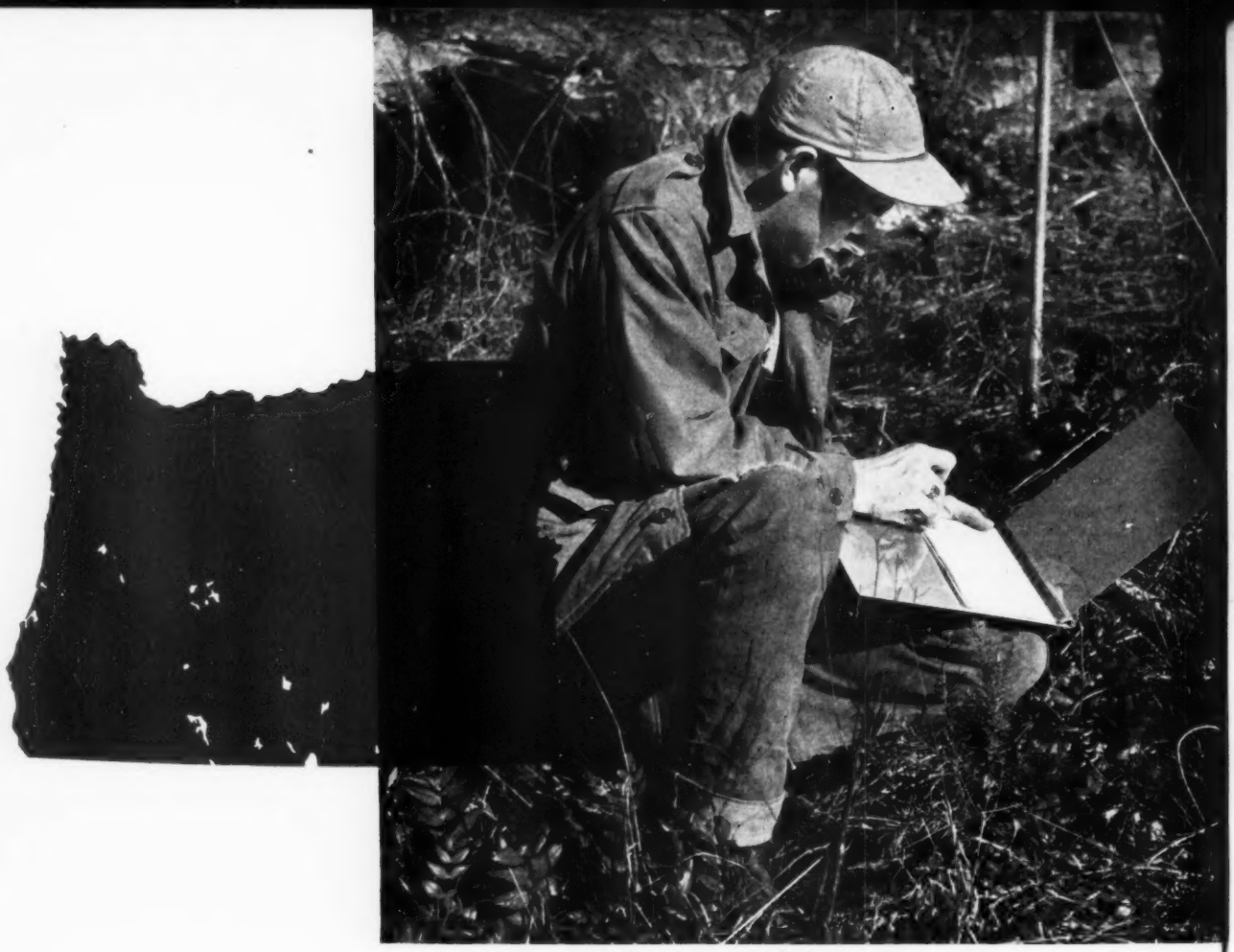


OSC forestry student making a regeneration survey

OREGON STATE . . . Home of the Fernhoppers

Members of OSC forestry staff: l. to r., Professors H. R. Patterson, J. E. O'Leary, W. A. Davies, Dean Paul M. Dunn

THE state of Oregon is noted for its big timber and vast areas of forest land. The business of lumbering, logging and timber growing is big industry—it has been, is, and always will be. In 1953, the gross income from forest products in Oregon exceeded one billion dollars. Due to favorable climate, the trees grow rapidly and the volume per acre is large; also, the moisture and sunshine provides the nutrients for many other plants, including the bracken fern. The occurrence of this forest plant, growing in the Northwest woods, normally to heights of 3-6 feet, is the basis for the nickname "Fernhopper," which has been assumed by the students in forestry at Oregon State and is applied to woodsmen, loggers and foresters. For the past 25 years, the Fernhopper Banquet has been scheduled in February and attended by approximately 500 forestry school alumni, students and friends. Other features of the "Fernhoppers" School are the Arboretum Day activities (work-contests) each spring, and the red neckties worn every Wednesday by the forestry students.

Oregon State College, a land-grant institution founded in 1868, is located at Corvallis in the Willamette Valley, about 85 miles south of Portland. With a current enrollment of 5,000 students, the college administrators, from the beginning, have

By PAUL M. DUNN

recognized that the present and future wealth of Oregon and adjacent areas, lies in the natural resources and the ability of the people to develop, manage and use them. The resources are of the land; namely, the forests, the grass, the soil and the water. The several curricula of the institution have emphasized these points.

At the turn of the century, the College took cognizance of the place that education could play in proper forest land management, good timber harvesting and complete utilization of the forest products, and embarked on an educational program emphasizing the three essentials that are vital to sustaining forest land and industries; namely, training of professional foresters, fostering research, and providing service to citizens of the state and to industry.

The first forestry courses at Oregon State were taught as early as 1896 under the supervision of the Botany department. Professor A. R. Lake was one of the early instructors. Interest swelled as a demand for trained foresters followed the establishment of the Cascade Forest, the first federal forest reserve in Oregon, and the consolidation of the timber lands in 1905, in the Department of Agriculture, under the Bureau of Forestry, now called the Forest Service. In 1906, the OSC Board of Regents authorized the establishment of a separate department of forestry and a four-year curriculum pointing toward a professional degree in this major field of study.

In January of 1910, a young forester, trained in Michigan, with experience in the federal service, was brought in as professor and head of this new department. This man, George W. Peavy, a name that is synonymous with forestry in Oregon, pioneered a program that was to make the state a leader in forest education and practices. The current program for both the college and the state shows the progressive leadership of Dr. Peavy, who headed the school for 30 years and also served the Oregon State College as its president from 1934 to 1940.

The forestry students, five in 1906, increased to 22 by 1909, and the June 1910 college graduating class saw the first forestry graduates, four in number; two of whom are still living, Harold Gill of Portland, and T. J. Starker of Corvallis. "T. J." after serving for a period with the Forest Service, returned to the campus as a member of the staff from 1922 to 1942. He and his son Bruce, an OSC forester of the class of 1940 (the first forester-son of a Fernhopper), now operate a 35,000-acre forest property.

In contrast to the early enrollments, the high in registration of foresters was 555 in 1939 following the CCC activity; however, World War II brought a low of 34 in 1943. The return of World War II veterans in 1945 raised the student body to more than 500 again, and 106 men graduated in June 1950. The 1953 enrollment was 285, and 38 foresters received baccalaureate degrees in June 1954. Since 1910, a total of 1426 have received forestry diplomas, 83 of which were Master's degrees. Of this group, 58 are deceased; 21 of whom lost their lives in the two wars. A recent survey shows that of the above graduates, more than 75 percent are following forestry careers, about half in public service and half in industry, and are working in the 31 states, two territories, Canada and 10 other foreign countries.

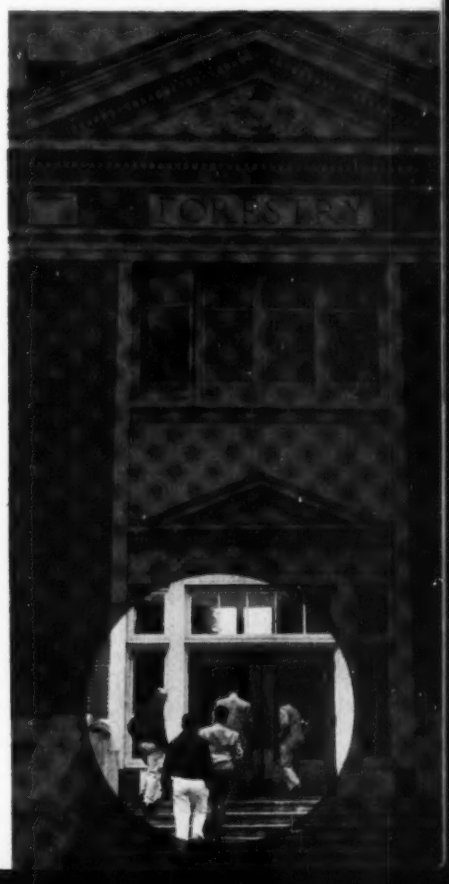
In 1913, the second major field of study, Logging Engineering, was introduced as a result of the active interest of the logging and lumbering industry. The same year saw the status of the department changed to a school with Professor Peavy as the first dean. In 1921, graduate work at the Master's degree level was authorized.

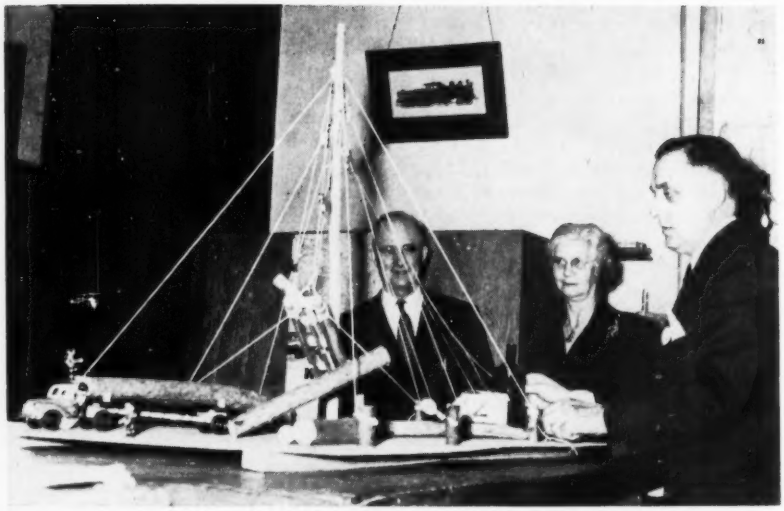
Also in 1921, a start was made on a long-range forest land acquisition program, primarily to provide field laboratories for instruction and research that has resulted in a facility that is unequalled by any other forestry school in the country. The first effort was sponsored by forestry alumni, students and staff members, and later was supported by the Board of Regents and Mrs. Mary J. L. McDonald, the wife of a former Oregon lumberman. The funds, provided by the above, permitted purchase of 181 acres of land seven miles north of the campus, and this area was dedicated in 1926 as the George W. Peavy Arboretum. Grants from two timber companies and Mrs. McDonald have expanded the program. Mrs. McDonald, especially, was most generous in donating both land and funds, providing more than 5000 acres of the present holdings. In addition, she made available $44,200 for endowments to finance graduate study in forestry, and $10,000 and many books for what is now named the McDonald Room in the main college library. The McDonald Forest, named for the major donor, is the main base of operations for the School's field program. Just recently, the federal government granted to the college a tract of 6200 acres, more than 4000 acres of which are timbered and are adjacent to the McDonald tract.

The total area administered and used by the Fernhoppers is 13,422 acres and all, except 2400 acres, is within four to 20 miles of the campus. As a result of the accessibility of this outdoor laboratory, where forestry courses can be taught by the staff throughout the entire school year, Oregon State does not require the students to attend special summer or field camps. This permits the students to have an additional summer period in which to gain experience on a job with some company or forest agency. In addition to normal college and school graduation requirements, each Fernhopper must complete two seasons of satisfactory work experience.

The school lands, mostly 60-90 year old second-growth Douglasfir areas, also provide many opportunities for research and demonstration of forest management practices. A full-time forest manager was placed in charge in 1948. The Arboretum and forest lands have been used as planting sites for many native and exotic tree specimens. Ponderosa pine race-studies and other tree-breeding experiments have been in

Up the steps and into the School of Forestry on OSC campus at Corvallis





Demonstration of model logging equipment at school open house

effect for 25 years. The T. J. Starker Post Farm was started in 1928 and since that time more than 2400 fence posts of 27 species have been subjected to various preservative treatments and set in the plot. The Arboretum provides space for a 7-million forest tree nursery and seed storage plant, both operated by the State Forestry department, and the area headquarters of the Polk-Benton Forest Protection District. The Forest Club cabin, a 42 x 68 foot log structure built by the forestry students, is the center of all the Fernhopper field activities. Oregon State is fortunate, also, in having a wealth of logging, lumbering, and milling operations as well as public forest land agencies in close proximity to Corvallis. The campus and forest instructional programs are supplemented to the fullest opportunity by field trips to the nearby plant and field operations. The school has a fleet of motor vehicles for its specific use.

The third major field of study, Lumber Manufacture, was added in 1927 to give emphasis to the utilization aspects of forestry. This year also saw the start of active research work by the initiation of studies relating to the seasoning of Oregon hardwoods. The Post Farm and pine-race studies followed.

The field of forestry has broadened through the years and the graduate is now expected to be acquainted with the many associated aspects of forest land management in addition to just the trees. The program at Oregon State has been adjusted to meet the trend and while its objective is not to become the largest in the country, it aims to be among the best. It is one of the 25 schools that are accredited by the Society of American Foresters as offering satisfactory instruction in forestry, based on staff, curricula, enrollment, physical facilities, budget and achievement of alumni.

The objective of the school is to develop men, citizens and foresters. Studies were made recently of the needs of public forest agencies and private industries. It was shown that the old-time training for technicians was no longer adequate for the administration of complicated forest responsibilities of today. Hence, new emphasis was given to course work to include management concepts as well as skills. Content of technical forestry courses were reduced to make room for more general education subjects. The departments were changed from their previous classifications to Forest Engineering, Forest Products and Forest Management, more accurately reflecting present day field practices. In all three, emphasis is placed on integrating forestry, not separating it. Responsibility of all foresters for wise use of resources is stressed. Provision for minor work in the forest management major was specifically introduced in 1936, with provision for specialization in the fields of forest recreation, fish and game, grazing, soil conservation, forest pathology, forest entomology, science and business administration.

The aforementioned calls for emphasis on a student personnel program, which is in effect and is incorporated with that of the institution. The forestry personnel procedures, under the direction of Dr. W. F. McCulloch, are recognized as outstanding among forestry schools in America. Accurate records are kept for each student and each is given a series of aptitude and interest tests. Encouragement is given to the student with proper background, apti-

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Looking healthy and happy, a group of Fernhoppers poses in front of Forest Club cabin

We talked the Fire out of Forests

By ARTHUR W. PRIAULX

Oregon and Washington Keep Green programs are doing an amazing job of reducing the number and severity of man-caused forest fires

THE year was 1940. Still etched deep in the minds of most northwesterners was the horror and savagery of the second great Tillamook Burn of 1939. It had been the same for countless summers as the red hell of countless man-caused forest fires blackened the skies and put fear into the hearts of thousands as they roared down to the very edge of towns and hamlets and farms.

In Oregon alone, 125,000 acres of the world's finest virgin timber was the toll of the red devil fire each year in the decade following 1930. Washington state's new forests and virgin timber was being devoured just as rapidly. Losses from man's carelessness mounted into the millions of dollars every year. Payrolls were being threatened, not to mention human life.

Colonel William B. Greeley must have been haunted by the dead of past forest disasters when he went to Governor Clarence Martin of Washington in February of 1940. He must have been thinking of the death toll of 11 helpless people who were killed by the Bandon fire of 1936, of the CCC boy from Illinois who died in the first Tillamook fire of 1933, and of the 38 men, women and children sacrificed in the great Yacolt fire of 1902. He knew this horrible loss of human life could happen again, and because our states are more thickly populated today, the loss in human souls could be even greater.

Governor Martin was quick to act. He called together leaders in forestry and fire protection.

It was to be an historic meeting, though none could know it then. Besides Colonel Greeley, the governor invited Major Charles Cowan, James Stevens, Corydon Wagner, Roderic Olzendam, Edmund Hayes, George Drake, Don Denman and Colonel Fred M. Fuecker, adjutant of the American Legion. There were others. It was a solemn occasion. The future of the region was at stake. These losses could not continue unabated and the threat to human life was too dreadful to contemplate.

An action program was needed. Everyone agreed man-caused forest fires must be stopped. From this inspired meeting came the idea for Keep Washington Green. It was not to be just another committee. It was to be a forceful, dynamic campaign to stamp out forest fires, root out the causes for man's carelessness and cure them.

One of the greatest programs for the preservation of the forests of the west was born that February day in 1940 at Olympia, Washington. We are only beginning to realize, 14 years later, how powerful and effective a force for good the Keep Green program really is.

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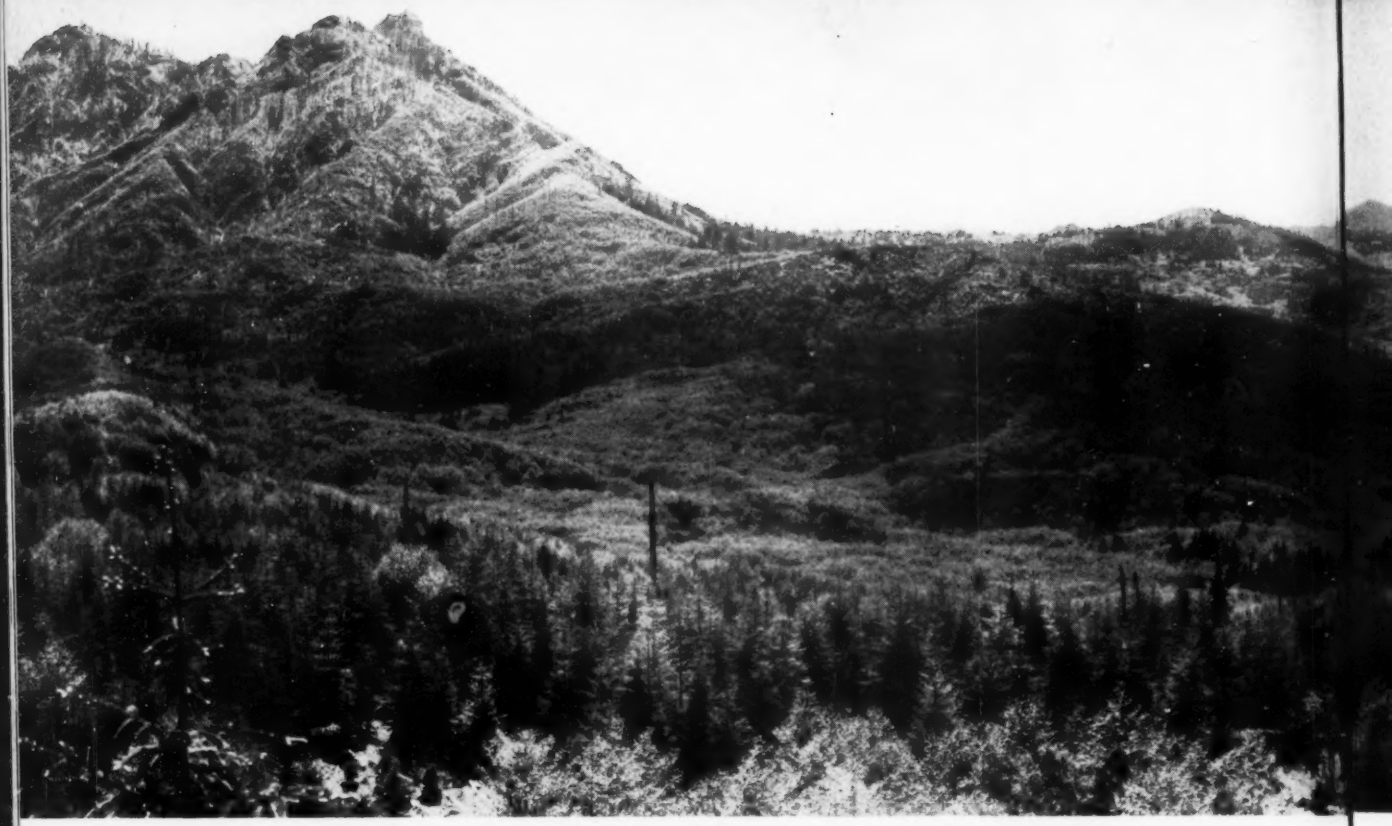


"Trees forever" is the slogan on the Clatsop Tree Farm to be visited by members of AFA this month

This is Forestry

I. REGENERATION

Natural reseeding provides for most of the Northwest's regeneration needs. When it fails, seed banks take up slack

IN EVERY grocery and department store across the land are hundreds of products—all used daily by millions of Americans—that had their origin in the Northwest's rich, productive forests. How those products got there—the milk containers, tissues, paper towels, cartons, wax papers and all the rest—is the subject of this picture story. Its purpose is to show the very real link that exists between millions of American families and millions of acres in Northwest Tree Farms—areas where trees are being grown commercially as a perpetual crop. Since the certification of the Clemons Tree Farm of the Weyerhaeuser Timber Company in 1941, Tree Farming has spread to 36 states with over 31 million certified acres. This month members of the AFA attending the Annual Meeting in Portland will have an opportunity to visit two or more of these large industrial Tree Farms and they will note that one key to the success of these units depends in large measure on an abundance of good, all-weather access roads. The Crown Zellerbach Corporation, owner of the Tree Farms to be visited, has a total of ten certified Tree Farms with 625,000 acres and 2000 miles of roadways.

Photos courtesy of the West Coast Lumbermen's Association and American Forest Products Industries, Inc.

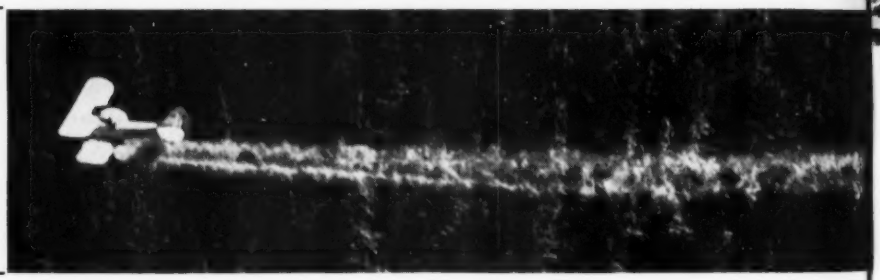
The sea of cones in the bank on the opposite page is kept replenished by these Clatsop Tree Farm foresters

Northwest forest managers are trying various methods of helping nature reforest quickly after logging. Here a helicopter sits down on a stump after seeding a harvested block on the Clatsop Farm

On areas where repeated fires did away with all nearby timber seed sources, hand planting of seedlings raised by the industry in its own nursery is found to be best way to restore land to productivity

First thinning has already been made here, on Columbia Tree Farm, and the pulp logs are being hoisted aboard the truck with a type of heel-boom shovel

Protecting forest from insects. This plane is being used to spray a part of the Clatsop Tree Farm lands against an infestation of hemlock loopers

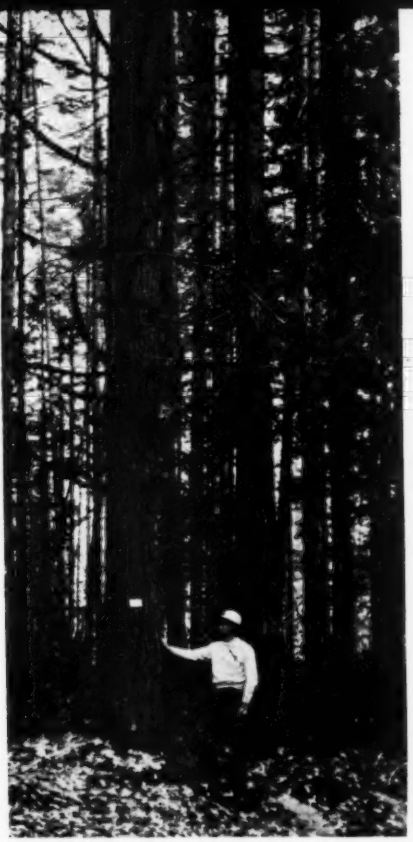


II. CULTIVATION AND PROTECTION

The Tree Farm movement, now extended to 36 states, started in 1941 on the Clemons Tree Farm, near Montesano, Washington. Here is part of this industrial forest, showing part of extensive array of fire control equipment used there

First step in fire protection is to fell snags, which act as torches in case of fire. Here a set of timber fallers is at work in an area where virgin timber was killed by flames 25 years ago. Stumps indicate a previous salvage harvest

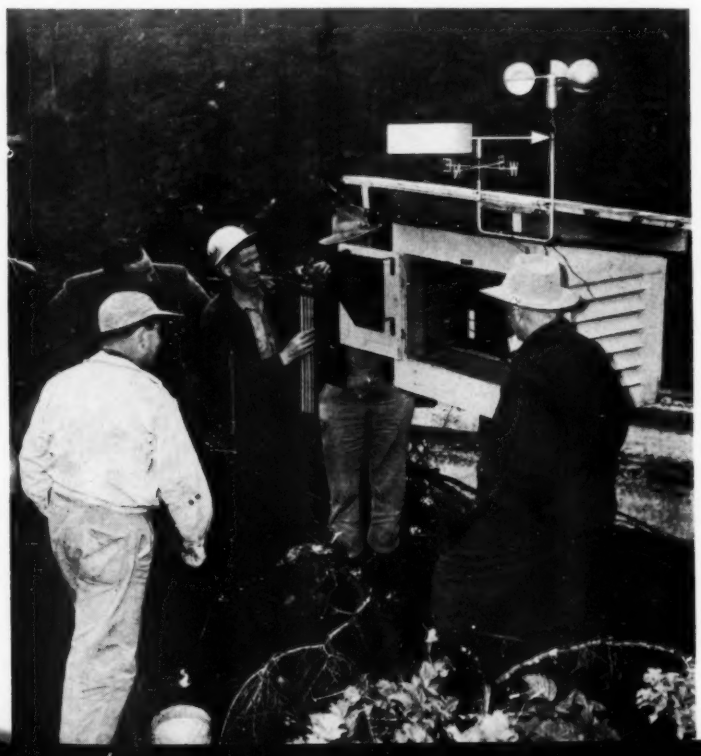
Under Tree Farming practices, stands are thinned periodically to save doomed or dying trees



Some companies mark with paint, others with tags like this one. Note wolf type tree labeled for harvest in thinning operation

Fire lookout towers play key role in Tree Farming. Here Douglasfirs creep up on tower at Columbia Tree Farm

Weather stations like this dot West Coast Tree Farms. Information supplied by such stations helps in the evaluation and forecasting of weather



Fire danger signs keep forest users aware of fire situation as it changes from day to day

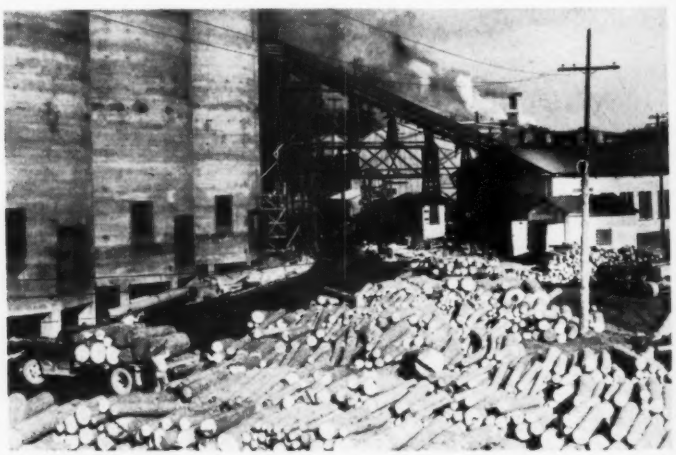
Trucks haul Tree Farm timber to the mills or to transfers on the river. The hauling is over privately-owned Tree Farm roads built for extra-heavy loads

III. HARVESTING AND MARKETING

Majestic stature of Douglasfir is illustrated by this view of a stand near the Columbia

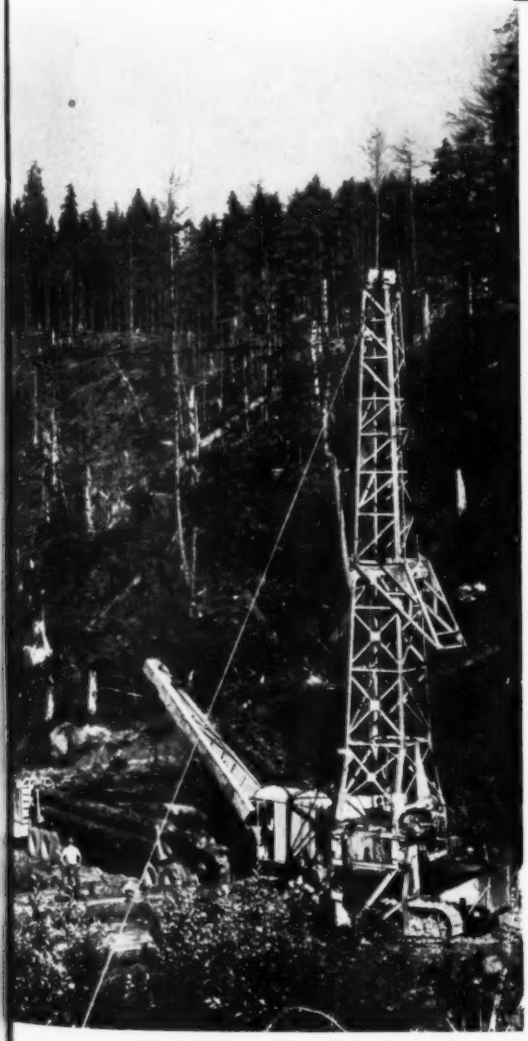
A log transfer on the waterway. Here a truck load of logs weighing 30 tons is lifted bodily and dropped into the river for towing to the mill

Tomorrow's paper. At Camas paper mill stacks of eight-foot logs brought in by small Tree Farmers await journey through the mill

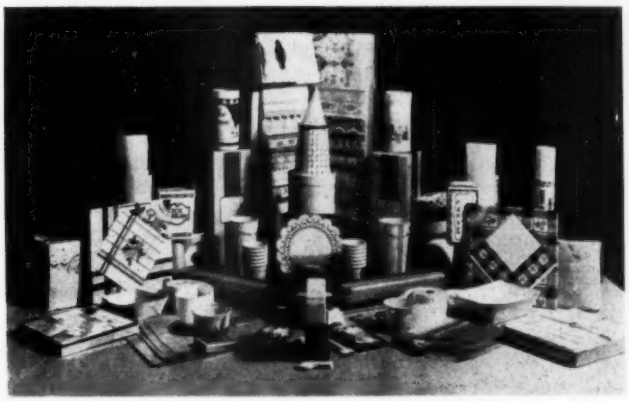


This steel tower machine pulls in and loads log on Clatsop Tree Farm

Wet, cotton-like pulp, composed of millions of tiny wood fibers is mixed with chemicals to bleach it, make it stronger. The pulp then is sprayed with water



Products of pulp and paper mills are many and varied—fine writing papers, newsprint, soft tissues, waxed papers, sturdy containers.



Thanks to the versatility and economy of paper most foods found in grocery stores are packaged in containers made from woodpulp

93% of Members Give Unqualified Endorsement To AFA's Program For American Forestry

AFA's new Program for American Forestry has been officially adopted by the membership with 93.1 percent of all members who voted giving it their unqualified endorsement.

In announcing that 3959 ballots were counted and recorded, Executive Director-Forester Lowell Besley said that 3687 members, or 93.1 percent, approved the program in its entirety; seven members, or 0.2 percent, voted against the whole program; and 265 members, or 6.7 percent, approved the program in part.

A total of 483 members, or 12.2 percent of all those who voted, commented on the program in addition to marking their ballots. Of this number, 236 approved the program in its entirety and simply added words of encouragement and support. Of seven members who voted against the entire program, five registered comments of disapproval to the effect that AFA's program places too great an accent on federal control and activity.

Biggest bulk of constructive criticism came from 242 members who approved the program in part but who disapproved of specific sections or parts of specific sections. This group—and it appeared to represent a hard core of industry representatives, bankers, foresters, educators and representatives of public agencies—filed many pages of comment along with their votes in pointing out why they disapproved of certain sections and stating what, in their judgment, should be done about them.

In commenting on the contribution of this latter group, Mr. Besley said that these members have performed a valuable and often time-consuming service that should prove of incalculable worth in the task of putting the program to work in the months ahead.

"We all know that no national program as broad as this one can completely meet the desires of everybody and also that it will have to be adapted to fit specific needs in various regions and localities," Mr. Besley said. "These criticisms should prove most helpful in putting this program to work and will serve as constructive guideposts all along the route."

A partial analysis made by Mr. Besley of the most frequent adverse comments on the program has been broken down as follows:

Section I, Forest Landownership (Parts 1, a, b, c and 2)—A total of 114 members (the largest number to register a dissent to a whole section or portions of it) voiced disapproval as follows: 50 members said that the program expresses too much preference for, or emphasis on, federal ownership or control of public lands before a national study of this problem is started. But 18 members said the program implies a preference for more private ownership of such lands or provides inadequate safeguards for existing public lands. Sixteen more members turned thumbs down on a landownership study by Congress, stating that a Congressional Committee would not be broad or fair enough, or would be too busy, to make an impartial and worthwhile study. Six members said Governor's Committees in the states to aid in making such a study would tend to be "too political" or not truly representative. Another 21 members disapproved Section I in its entirety without comment.

Section II, (B-6) Control of Destructive Forest Practices—17 members said they were opposed to forest regulatory laws of any type or to any public controls. But, ten members said they believed that some form of federal regulation of forestry practices (cutting, etc.) is required. Six more recommended minor word changes and there were four other comments of a miscellaneous nature.

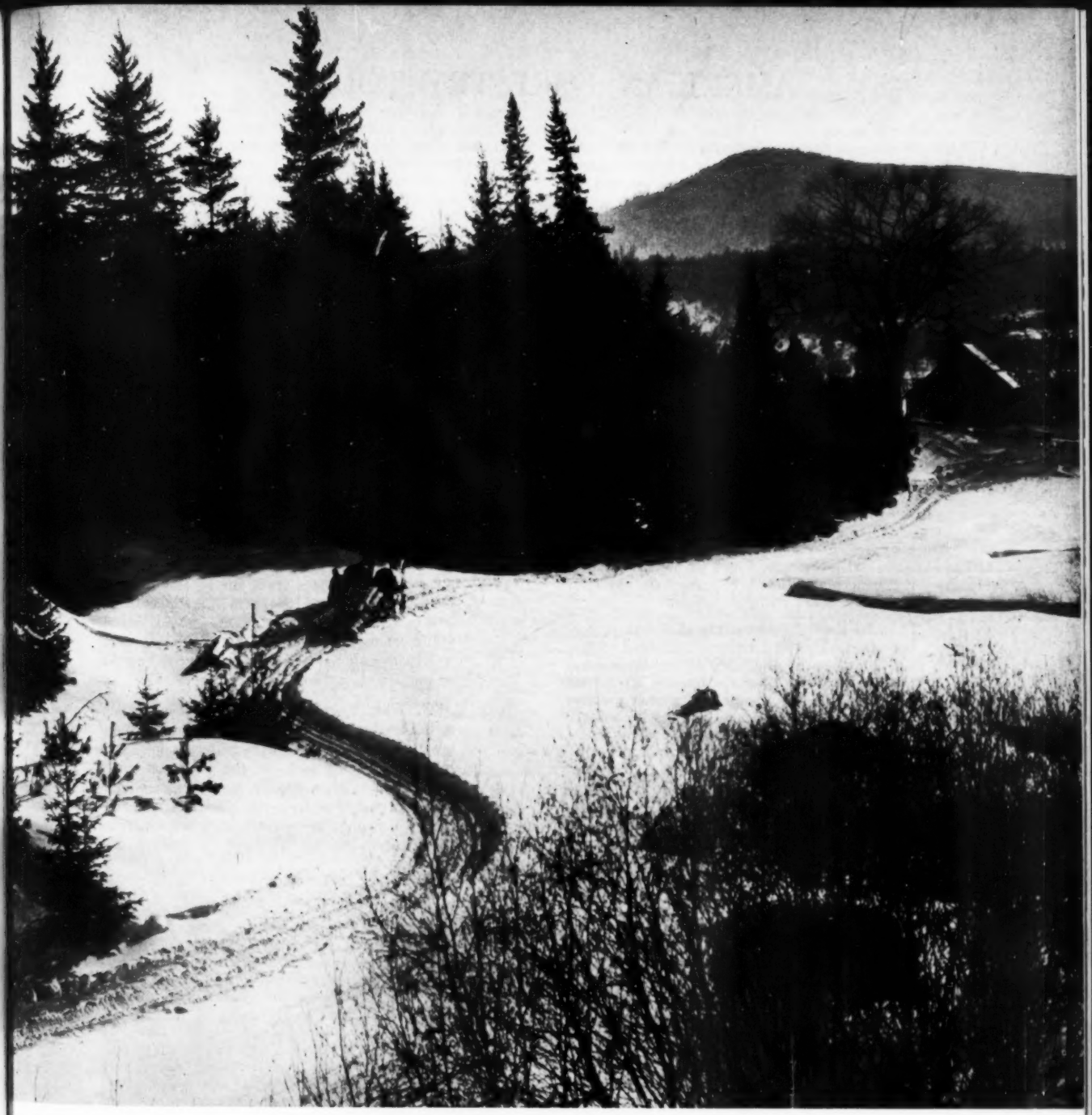
Section III (A-3 and 4) Water—Of 33 members who commented on this section, 12 said there is too much federal ownership of land and that they preferred to see more private ownership. Six members said they opposed federal power or additional dams. Four members urged replacement in kind in flood areas publicly acquired. Seven people recommended minor changes in wording and there were four other comments of a miscellaneous nature.

Section III, Forest Recreation (Parts 1, 2 and 3)—Thirty-seven members addressed comments to this section, with 15 advocating disposal of land, or some cutting of timber on some park lands or wilderness areas. Moderation in setting aside such special park and wilderness areas was also urged by this group. On the other hand, nine members wanted more emphasis on acquisition of additional federal recreation lands or increased recreational development on existing public lands. Seven others recommended minor changes in wording.

Section III (C-3)—Grazing public lands a privilege and not a legal right—Of the 16 ballots that specifically opposed this recommendation, ten said present permits and allotments are a legal right. Six miscellaneous comments included: that all public grazing lands should be sold; that grazing should be excluded from all public lands; that infringement of state's rights should be avoided; that class legislation on this subject was detrimental; and that grazing fees should be adjusted.

Section IV (A-1)—Responsibility for Assistance—Five members voted against all of A in its entirety. Of 26 ballots (including these 5) 11 wanted all technical assistance withdrawn or severely curtailed; ten urged gradual withdrawal of federal assistance with states taking over; two ballots urged more emphasis on expansion of public assistance. Three advocated minor changes in wording.

Of 483 members who wrote in commenting on the program, Mr. Besley said that 238 would require replies from the executive director. Sixty-eight of this number had received replies as of August 1st with 170 to go, Mr. Besley said. A total of 24,341 programs and ballots were mailed to AFA members in the United States and foreign countries. The return of 3,966 voted ballots represents 16.3 percent of the total membership, an unusually high response.



A Program For American Forestry

AMERICAN FORESTRY TODAY

DURING the past decade forestry in the United States, both public and private, has gained in accomplishment and stability. It has moved from the original exploitation of virgin resources toward the goal of permanent integration in the American economy and structure of land usage. These gains are due in part to progress under public and private policies. The cooperative and other programs of federal, state and private action have set in motion many resourceful local programs and undertakings, not only in forest protection and tree planting but in forest taxation, research, education, and the improvement of cutting practices. Other important advances have resulted from the improved economic status of wood, its markets and its production. Commercial forestry and wood utilization have made notable progress and are strengthening the economic base for timber cropping in many directions.

Much must still be done to conserve the forests of the United States and its territories and to improve their management. The goal of national policy is still the maximum contribution from forest lands to the American economy and to the health and spiritual well-being of its people. The importance of forests and forestry to national security and strength in world-wide relations has been reemphasized by international developments since World War II.

The more urgent and critical steps in American Forestry have been taken. The actions now necessary fall more into the category of long-range planning and adjustments, consolidating gains, filling gaps, and improving methods.

THREE IMPORTANT GOALS FOR FORESTRY

The situation existing today, based on experience during the last decade, points up three immediate goals for national policy. **They are:**

1. **To meet the essentials of forest protection.** This will require continued expansion, improvement and research on the control of forest fires with special emphasis on control by prevention. It is of equal importance that the control of forest insects and diseases be brought up to and maintained at a level of effectiveness comparable to the control of forest fires.

2. **To improve the national timber crop in volume and quality to a degree sufficient to wipe out all deficits and build up a reserve.** This can be accomplished practically and economically by utilizing more fully the productive capacity of our public and private forest lands.

3. **To obtain the maximum of economic and social services from our forests by realistic application of the principle of multiple use in their management.** This should include all forest uses and services but must give great weight to national requirements in conservation of water and control of erosion.

The multiple use of land involves many adjustments between conflicting uses and benefits. The grazing of watersheds on forest-producing lands by domestic livestock or the propagation of game animals often involve such conflicts. They can be resolved only by intelligent administration, which must be charged with responsibility for determining the priorities in use on any given area.

The Program

I—FOREST LANDOWNERSHIP

The commercial forest lands of the United States, excluding Alaska, embrace an estimated total of 461 million acres. They are scattered throughout the nation. Based on U. S. Forest Service estimates (1945-1950), their ownership in point of acreage is as follows: Federal, 89 million acres; state, county, and municipalities, 27 million acres; privately owned, 345 million acres. Small holdings greatly predominate in the overall ownership. Farm woodlands and other holdings of less than 5,000 acres represent 4,222,000 owners and a landownership of 261 million acres or more than one-half of the total forest acreage of the country.

To clarify the status, responsibility and action as respects the management and use of these lands for forestry purposes, **we recommend that:**

1 — Early action be taken by the Congress to establish a joint Congressional Committee, consisting of members of the Senate and House Committees on Interior and Insular Affairs, the Senate Committee on Agriculture and Forestry and the House Committee on Agriculture, whose objectives would be:

a) To consider a desirable pattern for ownership of federal, state and private forest, range and other conservation lands.

b) To formulate policies to guide action of public agencies toward achieving this pattern.

c) To recommend to the Congress legislation needed to enable Federal agencies to implement these policies.

2 — Early action by the governor of each state to appoint a representative committee to report on the conditions in his state as they may relate to items *a*), *b*), and *c*) above, and render a report which will be made available to the Joint Congressional Committee.

The American Forestry Association reaffirms its long-standing support of federal and state forests. As a general rule, it should be the national policy to leave in private ownership most forest land having reasonable prospect of effective management thereunder; and to extend state or federal holdings for timber production chiefly in land types not having such prospects or where there is need to complete existing public units. Future federal purchases or exchanges should not block the extension of state forests or of sustained-yield private management.

II—FOREST LAND MANAGEMENT

To achieve the three goals of American forestry as set forth above, accelerated action in the field of forest land management is called for along the lines and under policies here recommended:

A—FOREST PROTECTION

The protection of lands bearing forests or devoted to the growing of forests against destruction, depletion or damage by uncontrolled fires, epidemics of tree-destroying diseases, insects, and other pests is basic to long-range forest land management.

1—Protection Against Forest Fires

Continuous forest production of water, timber, forage, wildlife, and recreation is dependent upon adequate protection against fires. Current destruction or damage of these resources by fire, in the face of greater public use of forests and advances in resource values, emphasizes the urgency of an expanded and intensified control effort that will strengthen existing fire control programs and at the same time bring all forest lands under effective organized protection.

In some areas inadequate regular appropriations for forest protection result in inefficient use of the protection dollar. Special efforts should be directed toward increasing prevention and pre-suppression activities in order to reduce number and size of fires and consequently high costs of their suppression.

Organized protection of state and private forest lands has been extended to 369 million acres, leaving 58 million acres without protection. The cost of protection has risen to $37 million, 75 percent of which is borne by the states and private owners. State expenditures are almost four times and private expenditures about double those of 1944. Federal expenditures are nearly one and one-half times the 1944 outlay. In many cases, however, the increases in area protected have not carried corresponding increases in facilities and personnel.

The term "fire control" as used herein means activities to prevent forest fires as well as to control them after they start. In striving for effective control, past experience shows that integrated cooperative effort offers the most efficient and economical means for achieving desired levels of protection. **We recommend:**

1 — Coordinated effort by all agencies to expand and intensify fire control programs including:

a) A joint public and private review of past and current needs in each state and Alaska, of control needs and finances.

b) Full recognition of protection responsibility by the cooperating federal, state and private groups.

c) Increased emphasis on hazard reduction in areas of heavy use and high fire frequency.

d) More citizen fire prevention organizations at the community level and complete integration of all fire prevention and control programs.

e) Competent technical assistance made available to those who use fire as a tool in land management.

f) Further development of interstate and inter-American agreements to foster mutual aid. Joint training and joint planning for forest fire prevention and control.

g) Analysis of fire causes at the local level so that prevention programs may be readily adapted to meet current situations effectively.

h) Intensification of research in forest fire control and coordination with military research in defense against fire from atomic and incendiary attack.

i) Improvement of fire weather forecasting, particularly for local areas and specific forest types as an important tool to fire prevention and control. The Weather Bureau is encouraged to provide leadership in this service.

Changing conditions, increasing industrial activities and population pressures are constantly increasing fire hazards and risks, requiring intensification of prevention and control programs and modernization of techniques and methods of protection. The risks involved and the values at stake emphasize the compelling need for the general public, the public agencies, the private owners and users to integrate more completely their skills and efforts in the common cause of fire control.

More needs to be learned about fire and weather behavior in relation to fire control; and about human response in relation to fire prevention appeals. Research in these fields together with the development of media, methods, techniques, and equipment is essential to keep abreast of growing resource demands and rising protection costs.

The military and other federal research organizations have made great strides in perfecting the use of fire as an offensive weapon. Similar research is required to perfect a defense against fire from atomic and incendiary attack. These same defensive techniques and developments will contribute materially to the control of large and catastrophic forest fires.

2—The Control of Insects and Diseases

Inroads made by forest pests on the nation's timber supply today are imperiling the forest economy of many communities. In no field of forest activity is the need for immediate remedial action more acute. To combat effectively this menace, full use must be made of the cooperative principles of detection and control as laid down by the Forest Pest Control Act (Public Law 110) enacted in 1947. To make this act and related state laws more effective, **we recommend:**

2 — Greater and better coordinated efforts by all appropriate agencies toward more effective control of destructive forest insects and diseases.

To this end, we recommend:

a) A Joint public and private review of past and current research and control programs in relation to accomplishments and needs, pointing toward the expansion and coordination of research and control programs by federal, state and private groups. Special attention should be given to this study by the state pest control action councils.

b) That state and national pest control action councils review pest outbreaks, and provide leadership in obtaining cooperative control.

c) Expansion and improvement of cooperative annual pest detection surveys, to obtain adequate coverage

of forest lands subject to destructive outbreaks of insects and diseases.

d) That all forest states be prepared to cope with damaging pest epidemics by enacting enabling legislation to authorize and finance early action in cooperative control of forest insects and diseases.

e) That emergency funds be allocated in federal and state appropriations to control new and unexpected outbreaks of insects and disease at their inception.

f) Greater use of sanitation-salvage cuttings and other forest management practices known to be preventives against disastrous pest outbreaks.

g) Increased emphasis on forest management as a tool for preventing disastrous insect and disease outbreaks.

h) Practicing foresters should be sufficiently grounded in detection of tree diseases and insect epidemics that they can identify threatening depredations in an early stage.

Mounting losses from insects and diseases in all forest areas point to the urgent need for review of past research findings and control measures. The development through research of effective and economical control methods is the first basic requirement to cope with the present increasing pest problem. Such research needs to be strengthened in new work by federal, state and private forest organizations.

The Forest Pest Control Act passed by Congress in 1947 provides for cooperative programs of detection surveys and assistance in the control of forest pests. This long-needed legislation marks an important step forward in forest pest control. For its most effective operation there is need for similar state authorization, and appropriations to control outbreaks when small. Further, the difficulty of estimating control needs in advance makes it essential to have emergency funds available so that early action is possible. This will have the added advantage of minimizing losses and control costs.

3—Control of Destructive Rodents and Other Pests

To derive maximum benefit from intensified forest practices, it is often necessary to control destructive rodents and other pests, which defeat forestation efforts by destroying planted seeds or seedlings and thereby make restocking of forest lands economically impractical. By discouraging natural or aerial restocking of harvested lands, and by reducing drastically the survival rate of planted seedlings or trees, these pests continuously hamper the effectiveness of reforestation programs. Severe losses of thrifty growing stock are also continuously occurring from porcupines and other bark-feeding rodents. To combat this menace, **we recommend that:**

3 — Federal, state and private groups intensify research projects to develop and test measures for control of rodents and other pests and that results be made available for general use.

B—FOREST PRACTICES

With *protection*, the application on the ground of good forestry practices holds the master key with which to derive from forest lands their maximum and permanent contribution to American welfare. To accelerate progress already made, **we recommend:**

General Recommendations

1 — Continued extension of more intensive forest management practices on all lands devoted primarily to timber production. Such practices include:

a) General application of thinnings, improvement cuttings, and other cultural practices to forestall mortality losses, obtain more complete utilization, increase growth, and improve quality.

b) Universal use of harvesting methods that insure a satisfactory new crop of trees as rapidly as practicable.

c) Progressive construction of timber access roads where economically justified into commercial timber areas to provide better protection, intensive utilization of over-ripe, dead and damaged trees or stands and thereby retain the residual trees or stands for faster growth and greater productivity.

d) Extension of public timber sales and private timber harvesting into areas yet undeveloped so as to put all commercial forest lands into actual sustained production as rapidly as possible.

The greatest need for increased growth is in trees of sawtimber size. Present annual sawtimber growth has been (1945) estimated at 36 billion board feet. This growth rate ultimately can be more than doubled under intensive forest management if the best of currently known methods of stand improvement, harvesting and utilization are promptly and generally applied. The current supply of sawtimber can be substantially increased by intensifying the timber access road program and harvesting trees of sawtimber size which are now being lost through mortality.

2 — Promotion as a forest conservation measure, of the fullest possible use of the tree by encouraging improved harvesting and processing techniques and complete manufacture and merchandising of all usable wood material.

3 — Encouragement of consumer demand for forest products so as to maintain markets and to develop new outlets for all usable wood material as a fundamental inducement to the greater application of good forest management practices on private and public lands.

4 — That all classes of forest owners be encouraged by education and demonstration to participate in this advance in American forestry. But it rests with the administrators of public and private forests and with industries dependent on abundant wood supplies, to lead the way.

Responsibilities of Public Agencies

5 — With regard to public lands, public agencies responsible for timberland administration should:

a) Provide adequate forest protection as recommended in Section A.

b) Maintain timber inventories for each management unit of sufficient detail to provide a basis for management plans and timber sales. Prepare management plans to provide for orderly harvesting of the timber crop on a sustained-yield basis at a high level of productivity and quality.

c) Provide for construction of timber access roads to permit utilization of timber, not now accessible, either to meet an emergency or to carry out management plans.

d) Accelerate the preparation of timber for sale — in accordance with the management plan — to meet market demands. This involves advertising the timber for bids, preparation of sales contracts, designating timber to be cut, and supervision of the sales.

e) Provide for adequate regeneration of forest lands through natural regeneration encouraged by correct forest practices or by planting or seeding as needed to restore land to productivity within a reasonable time.

f) Take prompt action in emergencies created by insects and disease epidemics, major fires, or large-scale blowdowns, to salvage usable timber, temporarily suspending the allowable cut quota in order to prevent waste and to reduce fire hazards, following which the land should be immediately restored to productivity.

Control of Destructive Practices

6 — The development of state policies, methods or laws

by the people of each state to avoid unnecessary destruction of growing stock and young growth and to assure practices that will maintain continuous production on forest lands.

Needed controls should be developed state-by-state as local conditions and forest practices require. Painstaking discussion and explanation of proposed controls with the forest owners affected are essential in initiating such measures. The assistance to forest owners recommended in this program will help to promote compliance.

C—FOREST PLANTING

It is estimated that there are 65 million acres of poorly stocked and deforested areas, where artificial reforestation is needed or economically justified. A large percentage of these lands lies close to areas of largest populations and forest products demands. The highest economic use of such areas is timber growing; and planting and direct seeding are means of getting them promptly into production. **We recommend:**

1 — Continued expansion of tree planting and seeding activities sufficient to restore non-restocked and poorly stocked forest land to productivity within a reasonable time or to introduce more desirable species. Pending the determination of acreage in need of reforestation, a planting objective of two million acres a year is believed reasonable.

2 — That stock distributed from public nurseries be limited to plantings for forest products, wildlife food and cover, watersheds, erosion control, and windbreaks or shelterbelts.

In 1951, 450 million trees were distributed from federal, state and industrial forest nurseries. The current annual planting and seeding is approximately 500,000 acres, about 80 percent of which is on private lands. Increased planting activities are important on publicly-owned lands, and on industrial lands, where necessary to maintain full production of desirable species, or for watershed protection and shelterbelts. Reforestation on the scale recommended will create new wealth for the nation and hasten balancing of the forest budget.

While there have been notable increases in acreages reforested annually during the past three years, there still are serious shortages of seeds and planting stock in most regions. Consideration should be given to improvement in quality and quantity of seed supplies and planting stock.

III—MULTIPLE-USE POLICIES

In furnishing the greatest good for the greatest number in the long run, forest areas provide many services and products in addition to timber. Conflicts arise and the highest use must be considered paramount in any given area. Under the principle of multiple use, the wise administrator will establish the required priorities and plans to enable the area under his control to contribute the maximum in products and services.

A—THE CONSERVATION OF WATER

The conservation of water has become a problem of nation-wide importance and concern. Great sums are being expended yearly to protect watershed areas or to prevent soil erosion and sediment damage by uncontrolled runoff of water. The acuteness of the situation is emphasized by the increasing numbers of areas seriously threatened by shortages of water for domestic, industrial, agricultural or recreational uses.

We recommend recognition of water conservation as of paramount importance in the management of many public forest and range lands. Public agencies should provide for:

1 — Management of timber and grazing resources to improve the quantity, quality and regularity of water flow needed for domestic, agricultural, industrial and recreational use, and to prevent and eliminate water pollution.

2 — Coordination of planning and application of watershed-management and flood-prevention measures on upstream forest, agricultural, and range lands with the construction of downstream flood control and water power development projects.

3 — In federal dam and water reservoir projects, consideration of their impact on public and other lands and provision for replacement to the extent practical of impaired facilities and services.

4 — Public acquisition of forest and range lands where watershed protection and management are of very high priority.

The Flood Control Act of 1936 and subsequent amendments passed by Congress initiated a national policy for the study and improvement of critical upstream watersheds. Reports on some 60 such watersheds have been submitted to Congress which has approved 11 of them and has authorized the recommendations for maintaining forest cover and other water conservation works. This upstream watershed program is under the direction of the Secretary of Agriculture and is now being implemented through the Soil Conservation Service and the Forest Service. The Corps of Army Engineers and the Bureau of Reclamation are charged with planning downstream storage and diversion structures.

The management of forest lands plays an important part in the success of this program. Unofficial estimates are that at least three-fourths of the total forest area, commercial and non-commercial, are of critical importance for flood and sediment control and for surface and underground water conservation.

It is encouraging to note that in addition to the public agencies, numerous organizations, privately sponsored, financed and managed, have become active in the fields of water conservation, flood-control and prevention of erosion and sediment damage.

B—FOREST RECREATION

The expanding population of the country, coupled with shorter work hours and weeks and with a growing appreciation of the out-of-doors, has created a tremendous demand for forest recreation and has taxed the existing areas and facilities. **We recommend:**

1 — Full recognition of the intangible values inherent in forests and forest lands and of their tremendous importance to the recreational, cultural, and spiritual needs of our people.

2 — Provision for the preservation of special areas such as national parks and monuments and wilderness areas from any use that will interfere with the complete satisfaction of these needs.

3 — Development of adequate services and facilities to permit safe use and full enjoyment of public lands by the people.

An essential phase of forest land management is the reservation from conflicting use of areas which render higher public services through recreation and inspiration. Examples of this type of management are existing state and national parks, national monuments, wilderness areas and wildlife refuges, created to preserve natural, scientific, or historical features for the enjoyment, education and inspiration of all the people.

C—GRAZING ON PUBLIC LANDS

To administer effectively public range lands, we recommend that:

1 — Numbers of livestock be brought into balance with the sustained grazing capacity of the range.

2 — Sustained-range productivity be improved by reseeding, other range improvement measures and better management, in full consideration of priority needs of water, timber and other uses of certain public lands used for grazing.

3 — Permits to graze livestock on public lands be considered a privilege and not a legal right.

D—MINING ON PUBLIC LANDS

Efficient management of many millions of acres of federal public lands, including the discovery and development of new or known mineral resources, is in the public interest. The legitimate miner and prospector should be encouraged to carry on such work. However, widespread abuses under the existing mining laws — namely efforts by individuals to use the mining laws as a means of acquiring government lands for other than mining purposes — should be stopped. **We, therefore, recommend that:**

1 — Congress revise the federal mining laws to prevent their abuse by claimants or patentees who use their claims to tie up more valuable timber or other surface resources than they legitimately need to develop the minerals.

E—WILDLIFE MANAGEMENT

Forest land provides habitat for many important wildlife species. In the formulation of forest management plans, wildlife management should be accorded a definite place, and the fact recognized that in certain areas forest practices should be modified in the wildlife interest. **We recommend:**

1 — Integration of wildlife management practices with those of forestry on forest lands.

2 — Development of wildlife management programs in cooperation with state game agencies for the purpose of maintaining a balance between wildlife populations and domestic livestock in relation to available food supplies.

3 — That, to the extent practicable, private forest landowners should work with appropriate state agencies and local authorities to develop further the use of private forest lands for hunting and fishing which would not be detrimental to the major purpose of management, and to protection of the resource from fire and to other security measures. State and local authorities should recognize and carry out their responsibilities to protect the rights of the private landowners in this regard.

Overpopulation in certain areas of such animals as deer and elk has caused destruction of the forage, including important tree species, and starvation in the herd. To achieve a balance between population and food supplies in these areas, and to prevent the occurrence of similar conditions in other areas, it is necessary that herd control be instituted under the authority of state legislation. Likewise, the competition between deer and elk and domestic livestock for the available forage must be taken into account wherever grazing on public land is permitted.

IV—EDUCATION AND ASSISTANCE TO FOREST OWNERS

A—ASSISTANCE

Three-fourths of all commercial forest land in the country is in private ownership. It is distributed among more than four million owners in tracts ranging from small farm woodlands to large corporate holdings. The great majority of these owners, particularly in the small-ownership class, are uninformed as to best methods and techniques of managing their woodland for continuous and profitable growing of timber.

Here is the greatest field in which to increase forest production in the United States. This calls for a much more extensive and aggressive program of education and on-the-ground assistance to private owners. The problem is especially acute in respect to small owners who hold about 261 million acres or over three-fourths of all privately-owned commercial forest land in the country.

Considerable progress in this field has been made in the last decade by public and private agencies. The interest of forest industries in future supplies of raw material has brought them into this field in force. Many industry-employed foresters are now assisting woodlot owners with the management of their forest lands. This has greatly supplemented the work of a growing number of consultant foresters and approximately 400 foresters in public employ. This three-pronged drive to educate and assist owners in better management of timberland has demonstrated what can be done in this important field.

We recommend the continued, coordinated expansion and improvement by all agencies, public and private, of programs of education and technical assistance to the owners of farm woodlands and other small forest properties, and of advice and assistance to the small conversion plants in wood-using industries. This includes:

1 — As a basis of federal policy and financial cooperation in the above fields, broad educational and group promotional activities should be conducted by state extension organizations; service programs and individual assistance on the ground should be directed by the state departments of forestry in accordance with federal and state policies clearly defining the limits of free public aid.

2 — Forest industries which buy logs or pulpwood from woodland owners or contractors should, as a procurement policy, instruct their suppliers in good forest practice, institute or expand management service programs and establish purchase procedures that will encourage good management practices by small owners.

3 — Coordination at the state level of all agencies working in these fields is of utmost importance to avoid wasteful duplication of effort.

4 — Expansion of forest educational and extension programs in agricultural areas is needed to reduce woodland depletion by livestock where land is primarily adapted to forest growth.

5 — Emphasis should be given to the fact that the woodlot is an important resource to the farm and should be so recognized in farm planning. Forestry should be an integrated part of the activities of soil conservation districts.

B—FOREST TAXATION

If the efforts of a greatly-expanded field staff are to prove successful, forest and forest land taxation, income tax laws and forest credit and insurance must all be looked at realistically in terms of how best to promote intensified forestry practices on the ground.

The general property tax, unless specifically modified, often imposes an inequitable burden on properties devoted to the continuous production of forest crops. Usually such burdens are the result of improper assessments or unreasonable tax rates, or both. The confiscatory effect of this tax, if levied year after year on growing trees, discourages private forestry enterprise and may lead to

destruction of forest resources with consequent harm to the nation's economy. This is especially true for stands of sawtimber which must be grown on long rotations to obtain maximum yield and value. Special taxes for such purposes as construction of dikes, drainage ditches, and other improvements may have a similar deterrent effect. The general property tax should be modified in its application to forest properties or superseded by a system of taxation more similar in effect to systems applied to other types of property.

Likewise the federal Internal Revenue Code as it applies to timber has an important influence on the decision of private forest landowners to practice the long-term forest management necessary to assure adequate timber resources upon which the nation can depend for its future requirements of forest products. Growing timber is a capital asset and, without denying any forest owner the opportunity to include in ordinary operating expenses the costs of maintenance and protection of, and other ordinary recurring expenses incident to, the ownership of his forest lands, its owners should be allowed the same capital gain or loss treatment under the income tax law as is allowed other taxpayers disposing of capital assets. Such equitable treatment encourages sound, long-term forest management and stability of ownership and communities. **We recommend:**

1 — Vigorous and prompt state action where necessary to effect forest taxation systems adapted to continuous forestry enterprise and to relieve forest owners from disproportionate burdens now imposed on forest lands by the general property tax and other taxes. This action may involve new legislation, new regulations, new methods of assessment and administration, or all three.

2 — That individual and corporation income tax provisions of the federal Internal Revenue Code encourage sustained-yield forest management by allowing as deductions from income all ordinary recurring expenses of tree and timber growing and further by permitting the taxpayer who owns or has contract rights to cut timber to elect to treat consistently the proceeds from timber cutting either as ordinary income or as capital gain.

C—FOREST CREDIT AND INSURANCE

Federal and state statutes and regulations have prevented the banks from accepting forest properties as collateral security for loans to finance timber growing. This restriction on forest properties as liquid assets has severely limited the sources of funds for this purpose. This has been particularly true with respect to the owners of smaller properties. Industrial and other owners of larger forest properties have often had the advantage of other credit and sources of funds. Additional provisions should be made for meeting the credit needs of owners undertaking the growing of forest crops as a business and in order to assist the flow of capital investment into forestry. National banks should avail themselves of the opportunities afforded by Public Law 285 of 1953 to make loans to woodland owners and thus provide a much needed service. The various states should be encouraged to enact similar legislation where necessary to permit state banks to function in a comparable manner and thus further expand the available forest credit facilities.

Forest fire loss experience is favorable to application of the insurance principle in a large part of the country. Such application is needed as a practical business aid to full production. **We recommend:**

1 — That adequate credit facilities to encourage intensive management of woodlands and continuous production of timber be made available by national banks in accordance with the provisions of Public Law 285 of 1953 and by state-chartered financial institutions operating within the framework of similar or more liberal legislation.

2 — That forest owners consider formation of a mutual forest fire insurance company or companies unless established fire insurance organizations act without undue delay to extend their operations to include forest properties at rates consistent with the risks involved.

D—EDUCATION (PROFESSIONAL)

To advance forestry in proportion to its ever-increasing importance to the nation, a sufficient number of thoroughly trained forestry technicians and specialists must be added to the ranks of the profession each year. This calls for strong professional institutions which will turn out foresters well grounded in fundamentals, as well as specialists in the various fields of research, including subjects such as forest genetics and watershed management which are not now adequately covered. There is a recognized need for an increase in practical farm forestry courses for students at agricultural colleges. Also a need exists for sub-professional training at the ranger school level. Technical conferences and exchange of information leading to professional improvement should be encouraged, including short courses in forest soils, hydrology, photogrammetry, genetics and like subjects. **We recommend:**

1 — Strengthening of professional forestry training in vital fields not now adequately covered; continued sub-professional training on a regional basis where the need is evident; expansion of continuation training for practicing foresters through technical conferences and short courses.

2 — That agricultural colleges offer courses in forestry giving prospective farmers, county agents, agricultural teachers and other agricultural workers an understanding of the importance of woodlands in farm economy and some knowledge of their management. Forestry should also be included in the programs of instruction of the vocational schools of agriculture.

3 — Constant attention be given to ways and means of making federal and state service in forestry agencies an attractive career, including reasonable security for competent technical personnel.

E—EDUCATION (PUBLIC)

Education is a primary means by which forestry programs and practices can be continuously improved. The use of movies, radio and television has broadened the field of forestry education, both for young people and adults. Teacher training through workshops and other means and work with organized youth groups are particularly important with the emphasis on the essentiality of our forests in everyday life from the standpoint of wood production and their role in soil, water and wildlife conservation. Such programs should be worked out to fit local situations and conditions and should be conducted cooperatively with local conservation organizations under strong and well-qualified leadership. To facilitate this work, cooperative action should be initiated to designate clearing houses at the regional or state level for dissemination of appropriate films and radio and television scripts for use in public education and forestry. Better understanding of the importance of forests to the public can also be effectively promoted by a well-informed press, significant articles in periodicals, well-planned advertising campaigns and well-distributed demonstration woodlots. The importance of assembling, preserving and publishing historical material is recognized as being of major importance and should be stressed. **We therefore, recommend:**

1 — Intensification of public education in forestry matters through increased use of audio-visual methods, teacher-training workshops, youth conservation camps, suitable published material, public meetings on demonstration woodlots and the establishment of appropriate clearing houses for dissemination of public education materials.

V—FOREST RESEARCH AND SURVEYS

Research is essential to forestry progress in that it supplies the knowledge which leads to better methods of growing, harvesting and utilizing forest products. Forest surveys report the conditions on the ground and point up those needing correction or improvement. Used together, research and surveys, objectively directed and integrated, can provide powerful stimulation and effective assistance in attaining the goal set forth in this program.

A—FOREST RESEARCH

More research is needed in most phases of forestry but special efforts are urgently required in certain important fields which have hitherto received inadequate attention. These are: watershed management, insects and diseases, forest genetics, utilization of little-used species, economic aspects of forest management, forest products marketing and land-use conversion. Also research of a fundamental or basic nature leading to new knowledge is essential to long-run progress and has been neglected.

A need exists for improved cooperation among participating groups and individuals. More advisory committees — composed of research specialists and those using the findings of research — should be set up without delay. The time lag between the acquisition of facts and the application of these facts in the forests, constitutes a major problem.

In view of this need for an accelerated action-program in this major field, **we recommend:**

1 — Expansion of forest research to certain fields not now adequately covered.

2 — Recognition of the primary but not exclusive responsibility of public agencies and education institutions for fundamental research and industrial organizations for applied research.

3 — Improved coordination of research through advisory committees and other suitable means.

4 — Speed-up of publication and application of research findings.

5 — Establishment of permanent study areas within virgin forest associations and other appropriate ecological areas in order to provide a more comprehensive knowledge of natural developments.

Annual expenditures for research by the Forest Service increased from $2,000,000 in 1940 to $5,400,000 in 1953. Expenditures by industries and other agencies advanced from $6,000,000 to $20,000,000 during the same period, with private research making notable progress in the field of wood use, especially wood chemistry. Cooperative research programs in which federal, state and private agencies participate have increased greatly in the last decade.

Nevertheless, a major job remains to be done. The responsibilities for that job should be shared by public agencies and institutions, business and industry, and private institutions and organizations. The responsibility for developing the fundamental aspects of the needed research should in large part be borne by public agencies and educational institutions. The forest industries have a responsibility, in turn, to concentrate on the applied aspects of research in production and utilization and to provide more of the necessary pilot-plant development for promising fundamental research leads. Industry should also sponsor more research in educational institutions.

B—FOREST SURVEYS

Basic information needed for sound planning of forestry programs and for a public understanding of the place of forests in the general economy can best be obtained through periodic surveys of the nation's forests. About two-thirds of the commercial forest land has been covered by official surveys and about one-fourth has been resurveyed. The estimates of 1952 show 1617 billion board feet of standing sawtimber; also 470 billion cubic feet in all trees five inches and over in diameter. The current annual drain (estimated in 1945) of which 3.4 percent loss from forest fires and 7.5 percent loss from insects, disease and wind, is nearly replaced by growth in the cubic-foot classification; but exceeds growth in the ratio of three to two in the board feet tabulation. The aggregate productive capacity of our forest lands is at least double their present growth.

In view of the stake of local industries and the states and territories in the forest survey, their greater participation in planning and financing the work should be encouraged. These surveys should provide information on timber needs, volumes, growth rates, depletion due to cutting, insects and diseases, and site classification. They should be so designed as to provide information on a county basis, where such detail is made possible by the cooperation of state, local governmental units and industry. A review of the nation's forestry situation at about ten-year intervals is desirable. There is need for drastic acceleration of the survey rate to achieve this goal. Conducted by the research branch of the Forest Service, new and improved techniques for making forest surveys are giving greater accuracy at less cost. **We, therefore, recommend:**

1 — Continuation and acceleration of the forest survey; greater participation by states and local industries; review of the nation's forestry situation at periodic intervals; development of new and improved survey techniques for greater accuracy and lower cost.

A PROGRAM OF ACTION

This program is essentially a statement of policies, which must be put into effect by public, legislative and administrative actions and by the supporting activities of industries, civic-minded organizations and public-spirited citizens in all fields of American life.

The American Forestry Association accepts responsibility for publicizing and obtaining general acceptance of this program and, in cooperation with other private and public agencies, for advancing its recommendations nation-wide by state and national actions as they appear practicable.

A Message to Our Members

Dear Member:

As shown elsewhere in this issue, those of you who voted on A PROGRAM FOR AMERICAN FORESTRY have enthusiastically approved it. Now, with your help we must put it into action!

There is a tremendous job ahead for all of us to make our forests and related natural resources contribute in full measure both to us as individuals and to our nation. No individual nor any group is big enough or broad enough to do the job alone. The American Forestry Association has never expected to do it by itself but to cooperate closely with the many other groups already at work on different phases of it.

And who is better qualified to help all these groups unite their efforts, take the broad view, set aside selfish interest, and push fearlessly ahead for the common good? We believe that sound management of our forests and forest land, and the soil, water, and wildlife which they support will redound to the lasting benefit of every one of us no matter who we are. Our magazine, our annual meetings and other projects we shall sponsor are predicated on this belief. That makes an important place within our ranks for every citizen in every walk of life.

How can we implement our broad program? It took the best minds in the country, with widely different knowledge and skills, to formulate it. It will take everybody to put it to work. Through our magazine and through our meetings we can tell what we know and do, and can continually find out what the other person knows and does. Through this pooling of knowledge and ideas each of us can do a better job both individually and in our various group efforts.

Many of you have asked how you can participate in the job ahead. Together we can broaden our knowledge, fill in the gaps, and translate our program into effective action. But we need more members on our team.

The more of us there are, the more effective we can be. You can help in two ways:

1) Let each one of us join the drive to swell our ranks under the slogan EVERY MEMBER GET A NEW MEMBER EVERY MONTH. If all of us pitch in, we can accomplish wonders. AMERICAN FORESTS arriving each month can be both your reminder and your means of introducing AFA to your friends. Read it from cover to cover, then pass it along to a friend who ought to belong to AFA, and then get him to sign the membership coupon which appears in each issue.

2) Jot down the names of friends or business associates interested in Conservation, send your list to us, and we will send them promptly full information about the Association and our cordial invitation to join.

Help us activate our program. Join our campaign today!

Sincerely,

Lowell Besley

LOWELL BESLEY
Executive Director-Forester

LB/hk

"Builds Haul Roads

BACH & GRAMES' TD-24 WITH DOZER building 6 miles of truck roads, plus skid trails, in Lola National Forest near Missoula, Montana. *"It can build roads faster than any other crawler,"* says Partner Wayne Grames.

Faster than any other crawler"

BACH AND GRAMES, Missoula, Mont., logging contractors, used the power and speed of the TD-24 to build haul and skid road to move out two million board feet of timber. Then the

"Big Red"—the INTERNATIONAL TD-24 goes through rock and mountain jungle on Lola National Forest contract for Bach & Grames

The power and agility of the Big Red TD-24 built the truck roads and skid trails and then helped bring out the logs.

"I find the TD-24's are selling themselves for building logging roads in the logging country," says Wayne Grames, partner. *"Through mountain jungle or solid rock, the TD-24 can build roads faster than any other crawler!"*

If you haven't seen a TD-24 in operation —if you don't know what the speed, power, and economy of "Big Red" can do for you—you're missing the biggest news in the logging industry in years. See the man who has the answers—your INTERNATIONAL Industrial Distributor. Ask for a demonstration on your own show—you'll be a TD-24 man from then on!

INTERNATIONAL HARVESTER COMPANY
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For every move in Earthmoving

See INTERNATIONAL "Job-Phased" equipment

***Phased* Equipment**—Machines designed and built to handle each major phase of earthmoving most efficiently and economically.

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INTERNATIONAL

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Now...set fastening studs wherever they're needed
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STUD DRIVER
Here's new economy...new speed in construction fastening! The Remington Stud Driver joins wood or steel sections to concrete or steel surfaces in seconds ...easily sets as high as 5 studs a minute. Powerful 32 caliber charges drive studs arrow-straight. The tool's light weight — only 5½ pounds — simplifies handling wherever studs are needed.
New guards for specific uses now make the self-powered Remington Stud Driver more versatile than ever. These attachments take all the guesswork out of stud location... assure fast, accurate fastening for every job. Illustrated are just 3 of these special guards.
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Guard for Conduit Clip
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Operation Chips

(*From page* 23)

and coarse pieces also being shunted off to the burner. The uniform chips fall into a conveyor and are taken to railroad car, truck or barge.

This shift to sawmill and plywood salvage by the kraft industry is hailed by many forest products leaders as one of the significant milestones in the wood-using industry's struggle toward an ever higher level of utilization. This is truly conservation with a purpose. It is wise use of our forest resource. This intriguing new giant is a mighty saver of timber. At least 750,000,000 board feet of wood a year already is chalked up as the "stretch" given the old-growth timber supply by this conversion of waste into chips. With the battle for chips still in full cry and another 50 chippers on order or to be built in the next two years, leaders say that at least 70 percent of the wood needs of this substantial segment of the forest industry will come from scrap and leftovers.

Upwards of one million feet of wood which once went into the burner at sawmills and plywood plants will be converted into valuable products for man each year.

This huge annual saving is equivalent to the timber which would grow on 18,000 acres of land if in old-growth stands. This chip business then is one of our most substantial conservation projects.

Mills operating in the highly defective, overage timber of the Cascade Mountain range in western Oregon see in the chip market an unexpected boom. There are many marginal logs on every acre which do not have enough sound wood which will make lumber or plywood to pay for bringing the log from the woods. Now that some of the wood fiber can be converted into chips to help pay the freight haul out of the woods, a considerably larger volume of this over-ripe timber can be salvaged.

The kraft industry has been in a constant expansion for the past decade and there are still opportunities for sawmills with leftover problems.

This new source of wood opens up attractive new prospects for expansion of an industry pretty much limited by available wood supply. Since chips from salvage do not deplete the old-growth reserves, but actually extend them, there is a good chance, industry leaders believe, the kraft

(*Turn to page* 56)

TO MEMBERS OF

THE AMERICAN FORESTRY ASSOCIATION

★

TODAY lumber and other forest-using industries are more essential than ever to the national welfare. We recognize the vital relationship of forest conservation to the permanency of such industries . . . .

Your valuable efforts in the promotion of forest conservation and wise use are important assets to our continuing development and use of practical measures for sustained forest production.

★

NATIONAL LUMBER MANUFACTURERS ASSOCIATION

A Federation of Associations of Lumber Manufacturers

INCLUDING

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NATIONAL OAK FLOORING MANUFACTURERS ASSOCIATION
NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION
NORTHERN HEMLOCK & HARDWOOD MANUFACTURERS ASSOCIATION
NORTHERN PINE MANUFACTURERS ASSOCIATION
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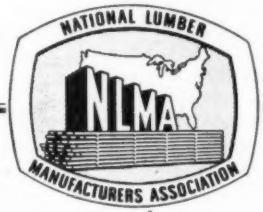
WESTERN PINE ASSOCIATION



1902 *1954*

Greetings...

to the members of The American Forestry Association attending their SEVENTY-NINTH ANNUAL CONFERENCE. As manufacturers of pulp, paper, and paperboard for the protection of America's foods, with timber sources and manufacturing operations in both the United States and Canada, Marathon is vitally interested in the programs of the Association which promote better forestry practices in America.

MARATHON CORPORATION

MENASHA, ROTHSCHILD, WAUSAU, GREEN BAY (NORTHERN DIVISION) AND ASHLAND, WISCONSIN; MENOMINEE, MICHIGAN; OSWEGO, NEW YORK; SUNNYSIDE, WASHINGTON; MARATHON, ONTARIO, CANADA.

MEMBERSHIP APPLICATION

THE AMERICAN FORESTRY ASSOCIATION

919 17TH STREET, N. W., WASHINGTON 6, D. C.

Please enroll me as a Member of The American Forestry Association. Enclosed find $5.00 to cover dues for one year, (Including subscription to AMERICAN FORESTS Magazine). My name and address is:

Name _____

Street _____

City and State _____

9-54

Operation Chips

(*From page* 54)

industry may enlarge to absorb much more of this material.

It is estimated there is another two billion board feet of leftover wood available at sawmills now going into fuel or less valuable products. Most of the fiber at plywood mills is now being converted into chips. Another 20 kraft mills could be supported on the material which now goes into lower grades of fuel or even into the refuse burner.

Some pulp men are looking to the future and one suggests that some day an even more valuable use will be found for leftover wood than for pulp. He says it is good sound policy to convert these portions of the log not used for lumber and plywood into the most valuable products possible, costs and markets considered.

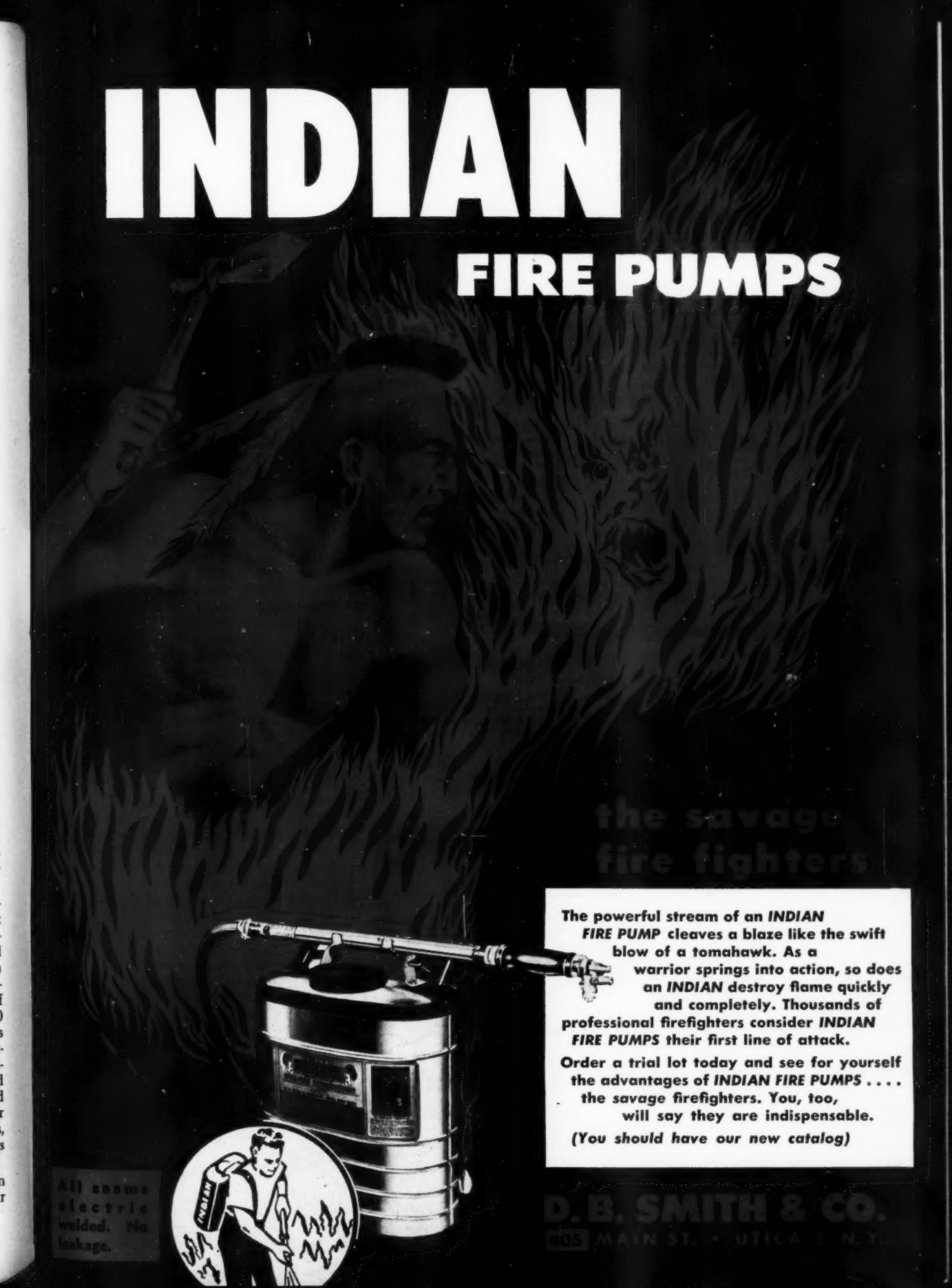
Many have asked why the transition to this new source of wood supply did not take place years ago. The answer is a technological one. Pulp mills were equipped to handle whole logs or cordwood. Plenty of logs and timber was available in the past to most mills at low cost. The chipper which could insure uniform quality chips from such a motley collection of scrap as short trim, long slivers, slabs, edgings and broken chunks has only been perfected in recent years. Recent developments such as hydraulic slab barkers, veneer chippers, banding methods for small logs in the woods, portable logging spars, tree-length logging and special loaders all aimed at making handling of marginal trees more economical, have increased efficiency in the woods and made much of the salvage residuals attractive to handle.

The reduction of waste in wood-using plants and factories in the past few years has been of significant proportions. Ralph G. DeMoisy, until recently director of the Washington Institute of Forest Products, estimates that a re-inventory in 1952 of sawmill wastes shows less than 50 percent of the solid residuals at mills found in 1948. That means a reduction of 10 million cubic feet annually of material formerly considered a nuisance, but now being utilized for the manufacture of consumer goods. By "solids" we mean slabs, edgings, trim—not sawdust, shavings or hog fuel.

This is a grand story of western people making more out of their forest resources.

INDIAN

FIRE PUMPS



the savage fire fighters

The powerful stream of an *INDIAN FIRE PUMP* cleaves a blaze like the swift blow of a tomahawk. As a warrior springs into action, so does an *INDIAN* destroy flame quickly and completely. Thousands of professional firefighters consider *INDIAN FIRE PUMPS* their first line of attack.

Order a trial lot today and see for yourself the advantages of *INDIAN FIRE PUMPS* . . . . the *savage* firefighters. You, too, will say they are indispensable.

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All seams electric welded. No leakage.

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BARTLETT TREE TRIMMING TOOLS

For Ease of Operation and Protection to the Operator

LET THIS NO. 1-WJ JOINTED PRUNER DO THE STRETCHING

It has the Compound Lever side cutting head and also double leverage due to the pulley which is attached to curved lever. It will sever any branch up to 1¼" in diameter with the slightest effort. Only a side cutting head leaves clean wounds. Made in 4 foot sections easily joined together to make the desired overall length.

No. 1-WJ JOINTED TREE TRIMMER

2 section	8 ft. overall	$14.25
3 "	12 ft. overall	$18.65
4 "	16 ft. overall	$23.05

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BARTLETT TREE PAINT

For the protection of wounds after pruning, use Bartlett Tree Paint. Easily applied with ordinary paint brush.

1 to 5 gals. $3.50 per gal.
6 1-gal. cans (1 carton) $2.50 per gal.
5-gallon drum $10.00 per drum
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M-414 MEYLAN PRUNING SAW

THE M-414 MEYLAN PRUNING SAW

uses an axe handle with the Bartlett No. 44 Pole Saw Head, however, a special blade of heavier tool steel is used and can be furnished in either 16" or 18" length. The axe handle, especially made for this saw, is properly tapered to fit the head and is 36" long. You can prune 9½ ft. from the ground.

M-414 Meylan Saw, complete with 16" blade	$11.60	Delivered
M-414 Meylan Saw, complete with 18" blade	12.00	

No. 999 HAND PRUNER

This drop-forged tool steel 9-inch Hand Pruner has a crucible steel blade and hardened hook. Unsurpassed.

PRICE DELIVERED $6.25

No. 777
TWO HAND PRUNER

Novel design places the blade on opposite side from general custom; makes possible greater efficiency and usefulness because pruner is especially adapted to use by right handed men. Hook remains stationary, blade closes. Will not wound the bark.

	Price Delivered
777—26" Handles with 4" Plain Ferrule	$6.85
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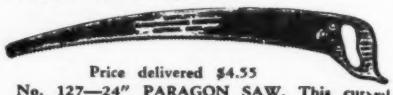
BARTLETT PRUNING SAWS



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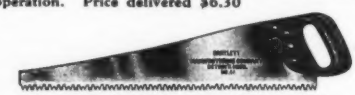
No. 127—24" PARAGON SAW. This curved blade, draw cut pruning saw is ideal for all-around pruning. Best quality saw steel. Easy grip handle.

No. 114B—Special Utility Saw combines for the first time: Quick cutting, Smooth cutting, Easy operation. Price delivered $6.30



No. 41 TUTTLE TOOTH SAW

This popular saw is made in 20 and 24-inch lengths. Equipped with a special extra-large handle. Tuttle tooth design is excellent for large cuts.

	Price Delivered
20"	$5.10
24"	$5.80

Where delivered prices are shown, delivery applies to U.S.A. only.

BARTLETT MFG. CO.

Box 19—3003 E. Grand Boulevard, Detroit 2, Michigan

Mt. Hood

(*From page* 27)

Grays Harbor communities in Washington and the Lakeview-Paisley area in southeastern Oregon. But objections from competing mills down the Columbia blocked the move.

As we curve westward from Hood River to complete our circle, we note how sharply the Columbia river cleaves Oregon and Washington. Cliffs and parapets tower 2000 feet or more above the river. The conifer blanket drapes here and there toward water's edge.

The Mount Hood forest ends at the south bank, but by another of its oddities it maintains two lofty lookout stations on the Washington side. Dog Mountain and Aldrich Butte simply have more sweeping views of its north slopes than do any points in Oregon.

The forest has 20 other lookouts within its own borders, with such picturesque names as Bull of the Woods, Sisi Butte, Grasshopper Mountain, East Zigzag, Indian Mountain, Bonney Butte and Devil's Peak.

Fire is a greater danger on this forest than on most others in the region. Its high ratio of recreation visitors boosts the chances for carelessness. Dry east winds whip through the Columbia gorge at times in summer, and snags still standing in old burns offer torches to summer lightning.

Far below we make out the fast water-level highway, the new U.S. 30, and the wriggling old route above it, the famed scenic Columbia highway. Bonneville dam, first of the great power dams built by Uncle Sam in this region, makes a lake of the river for many miles in the gorge.

We drop lower to catch a fairyland series of falls along the Oregon bluff. Multnomah Falls plummets 620 feet in two drops, and the stream tumbles down past a lodge which was deeded to the forest by the city of Portland some years ago. Wahkeena and Horsetail, Tanner Creek and Oneonta Gorge are other frothing cataracts.

In the Zigzag-Rhododendron area on the west slope are most of the 560 summer homes permitted, largest number for any Northwest forest. Resort and small business permits number about 80.

In the autumn thousands swarm in with buckets and boxes to pick huckleberries on the old burns.

(*Turn to page* 60)

THE AMERICAN TOBACCO COMPANY CONGRATULATES THE AMERICAN FORESTRY ASSOCIATION

The American Tobacco Company, maker of Lucky Strike—Pall Mall—Herbert Tareyton cigarettes, believes—as you believe—that the American people must be constantly alerted to the importance of preserving our forests.

Once again it's our pleasure to congratulate you on your untiring efforts to protect these priceless and beautiful forests from fire.

In the past, we've been proud to be able to contribute to your cause. Naturally, we're going to continue doing so. We're continuing to warn millions of Americans, through our radio and television shows, against the careless disposal of even a single match or cigarette in the wooded areas of our country.

We send our sincere best wishes for a productive Convention and for even greater future success putting out the fires in our forests before they start.

The American Tobacco Company

AMERICA'S LEADING MANUFACTURER OF CIGARETTES

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EXTRA HEAVY DUTY
PARK, PICNIC
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Unsurpassed in design
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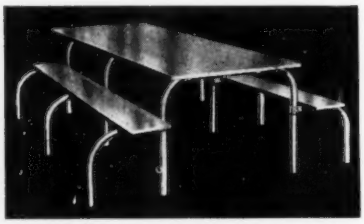
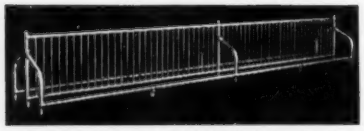


American Extra Heavy Duty Picnic Table
8 feet long, accommodates 12 persons.

AMERICAN APPROVED Heavy Duty Streamlined Park Bench for lifetime performance.

World's Finest
PICNIC GRILL
Massively built for extra heavy duty... cast of heavy stove iron, with strong cast steel support. 6-way draft control and other features not found in any other outdoor grill.



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AMERICAN
PLAYGROUND DEVICE CO.
ANDERSON, INDIANA, U.S.A.
WORLD'S LARGEST MANUFACTURERS OF FINE PARK, PICNIC, PLAYGROUND, SWIMMING POOL AND DRESSING ROOM EQUIPMENT

Mt. Hood

(*From page* 58)

Around 5000 acres are largely covered with this close cousin to the blueberry. And the rangers estimate yields at 10 to 20 gallons per acre in a good season.

More obscure is the forest's appeal to mycologists. The Zigzag area in addition to its gorgeous rhododendron displays in spring boasts 120 or more species of mushrooms which find soil and climate ideal. After the first fall rains especially, many families and clubs search for edible fungi.

The Mount Hood's remarkable multiple use is attended by multiple problems for its staff and personnel, which range in numbers from about 110 in winter to 275 or more in summer. And the gravest is continuing inadequacy of roads, a situation common to western forests.

Supervisor Lloyd Olson estimates 2500 miles of roads is the minimum for proper management. Counting even the poorest spurs, the forest now has 1066 miles. Only 293 miles of access roads are rated up to present-day needs. In the next 10 years another 300 miles of main access roads will be needed, plus rebuilding of 146 miles.

Lack of access roads looms as the main obstacle to full timber harvests in future years. The large number of lumber and plywood mills, pulp and paper plants within economic hauling distance assures the Mount Hood a ready market for its allowable cut.

Timber cutting has gone on mainly at the lower elevations, at the "front" of the streams. Deep extensions of present roads will be needed if the staggered setting principle is maintained. If done soon it will permit to some extent a balancing of high elevation logging in summer with low-level cutting in winter.

Currently the forest has an added problem of trying to salvage all possible timber killed in blowdown and bark beetle infested areas. The Mount Hood has lost less than the Oregon coastal forests, but the Clackamas alone has 60,000,000 feet or more which urgently needs salvaging.

This forest has a real interest in the proposal in Congress that $25,000,000 be advanced annually for five years for immediate building of key roads, the cost to be returned from later timber receipts. Military planners have endorsed the idea as a proper defense project.

(*Turn to page* 62)

THIS IS THE 2-WAY
Bendix
"MULTI-MASTER"

The Mobile Radio With A Thousand Uses!

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Mt. Hood

(*From page* 60)

Another need which is tied again to the Mount Hood's role as a people's forest is in recreation facilities. Visitors steadily increase, but almost nothing is being done to improve or expand the forest camp system.

Present facilities were largely built by CCC crews in the 1930s. Funds have been inadequate ever since, and the agency has many times stated it must reduce recreation areas it will maintain, if funds are not enlarged. Returning of some of the timber revenues would do for the purpose, say the staff people.

How well stocked with timber is this forest? A highway visitor to the mountain sees mile upon mile of old burns, but the rangers report most of them have a new conifer crop just starting. On the rainy west side more than half of the area is in sawtimber, three-fifths of this in Douglasfir, the rest in hemlock, white fir and upland species.

Twenty-eight percent is in young growth, nearly two-thirds of this in Douglasfir. Most of the young trees are on areas burned off as much as 100 years ago. Only nine percent of the west side won't grow commercial timber, such as higher mountains.

The Forest Service so far has planted 10,102 acres. Seeding was started 45 years ago, but the 1360 acres so planted wasn't successful. Young stands on 1138 acres have been pruned, still an experimental practice in the region.

On the east side of the Mount Hood, sawtimber occupies 70 percent of the land, slightly more than half of this being predominantly pine, 12 percent Douglasfir and the rest in other species, some of it rather poor. More than one-fifth of the area is in young stuff. Only six percent is non-commercial land, and two percent deforested.

Barring natural catastrophe, continuous restocking on the Mount Hood appears fairly well assured. Both federal and state laws require specific precautions by the loggers. Stand improvement fees paid by timber buyers are used for artificial restocking if nature proves laggard.

Nature and man cooperate in renewing the extracted resources, while others are undiminished through use. Multiple-use values benefit hundreds of thousands daily, millions during the year. In a profound sense, the Mount Hood is a people's forest, and will be for centuries to come.

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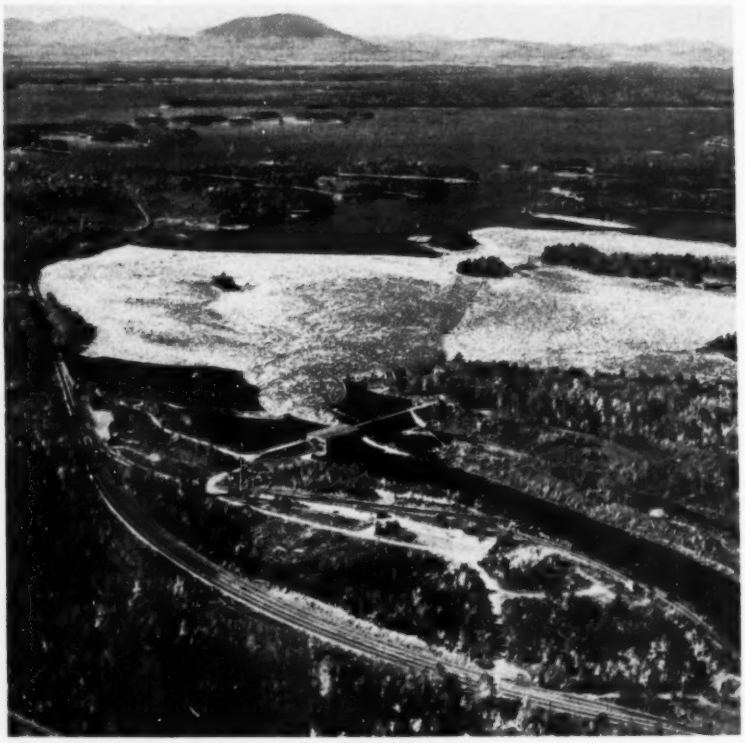

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Fernhoppers

(*From page* 34)

tude, and attitude for work in this field. There is guidance prior to entrance and throughout his college career, with a follow-up after graduation. The seasonal employment during the summers is not only a requirement but a training project. A detailed report is obtained on each student's summer work with specific information being subsequently incorporated into the advisory conferences with the individuals. Each student is rated annually by the entire staff. The total data serve as a basis for recommendations in respect to permanent positions. A close contact is kept with the men for at least a ten-year period in order to advise relative to job adjustments or changes. Most employing companies or agencies contact the school direct for both their seasonal and permanent needs.

In 1941, as a result of the interest of college and industry personnel, the state of Oregon inaugurated an active program in applied forest products research, associated it with the School of Forestry, and later officially designated the project as "The Oregon Forest Products Laboratory." This program, located on the campus, is outstanding in its field and is unequalled by any other state. In 1947, major financing, for the laboratory, and projects in forest management research, was provided by the enactment of a Timber Harvesting Tax. The income from this tax of five cents per 1000 board feet of logs harvested, less the first 25,000 board feet, was divided 60 and 40 percent respectively, for products and management research; the latter being under the supervision of the state forester. The annual income from the above tax has approached $400,000. The college provided the building and utilities for the Laboratory program, which encompasses research in all phases of chemical and mechanical phases of wood utilization. The current staff includes 38 full-time technicians and related personnel. The above tax law terminating in June 1953, was reenacted by the 1953 Legislature with some changes, chiefly a reduction in the amount of the tax from five to four cents.

The fundamental aspects of forest research have been stressed by the School, especially since the introduction of the program financed by state funds. With the development of the

(*Turn to page* 66)

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WORLD'S LARGEST MANUFACTURERS OF FINE PARK, PICNIC, PLAYGROUND, SWIMMING POOL AND DRESSING ROOM EQUIPMENT

Fernhoppers

(*From page* 64)

school lands, periodic timber sales have provided some income. The timber inventory shows that a minimum of 2½ million feet of timber can be harvested from the areas annually. This situation justified an expansion of the research program, and the Board of Higher Education, in April 1954, authorized the establishment of a Forest Experiment Station with the Dean of Forestry as the director. All forestry research carried on by the school, and the several departments in Agriculture, Science, and Engineering, will be correlated in the station by a committee headed by Dr. G. H. Barnes. The 1954-55 budget for the station calls for more than three full-time persons. Special consideration will be given to studies dealing with the regeneration and physical properties of second-growth timber and protection, soils, and watershed management problems.

In 1944, the College through the Agricultural Extension Service initiated a farm forestry program, and an extension forester joined the staff. Later, in 1949, a specialist in forest products marketing was added. The school is responsible for the subject matter phases of these extension projects. The entire forestry staff numbers 20 men; 14 in instruction, two in extension, three in research, and one forest manager. While each of the above men has his major duties, each fully recognizes the responsibility of the State College to the citizens, industry, and other state departments. Oregon's dependency on its forests, makes it extremely important that the forestry school shall aid in the better understanding and development of wise resource use programs. Each of the staff is engaged in one or more activities relating to the furtherance of sound practical forest management, harvesting, and utilization methods as extra-curricular duties; namely, the dissemination of oral and written information, providing short-courses for industry and public forestry personnel, cooperation with other agencies and interests affecting the forest resource.

The above brief account should indicate that the Fernhopper School is attempting to further the program of forestry in Oregon and elsewhere through providing instruction on the undergraduate and graduate levels, sponsoring activities in forest research, and providing service to the citizens of this area.

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One of these classes of MANINGSEED will fully meet your needs. Planters who want better forests from better seed should investigate our Scientific Seed Collection Program. Orders for MANINGSEED are booked in September of each year for delivery in November-December—subject of course to availability of crop. May we have your requirements?

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THE COUNCIL TOOL COMPANY

Fine Edge Tools Since 1886

Wananish, North Carolina

Pacific Rim Forester

(*From page* 21)

He bore an ax scar as badge of experience in the Minnesota pine woods. And then he was earning his calked boots with the bulls of the woods in the tall timber around Mt. Rainier and in the Yacolt burn of 1902.

For several years Clyde Martin of DePauw and Yale was forest engineer on construction of Weyerhaeuser's Clemons and Cherry Valley logging railroads, building about 40 miles of railroad each year. At Clemons 33 years later, as the company's chief forester he was a prime mover in the making of Clemons Tree Farm, America's first certified industrial tree farm. In the 1907-1910 era, the region was a roaring land, its human spirit typified by Stewart H. Holbrook's Hooktender "Highball" Anderson, who modestly said of himself, "When I yells, 'Go ahead!' the hemlocks all bend double and the clams go down a foot!" But the powerful hooktender would not have made the fair-haired, blue-eyed, beardless logging engineer glance up from his transit.

Hearing Clyde Martin speak softly through the cigar smoke about the golden age in the green land before World War I, this old-timer remembered the far day when he was an addict of the "Tiptop Weekly." Its hero, Frank Merriwell of Yale, was a champion in all sports, a master of all trades, an honor student, a gentleman of parts. Today Clyde Martin would be the first to reject a comparison between the Tiptop Weekly hero and himself. Yet his real ventures and adventures suggest a theme of "Frank Merriwell and the Bulls of the Woods Out West."

The forest engineer from Yale built railroads, saw the logging industry's first direct-connection lokey snake 100 cars a day out of the woods, took a hand in the making of the industry's first "luxury car camp," with sanitation, sheets, pillows, showers, drying room, bedmaking service, mighty meals, the comforts of home, as a project of the Weyerhaeuser Timber Company. There were other jobs that would have served well, with melodrama and raw color added, as material for adventure fiction.

In 1914 Martin was 30. World War I broke out in August of that year. The Kaiser's submarines blockaded vital lines of Indian trade, in-

(*Turn to page* 70)

The Sales Slip is Vital to Forestry

Fundamentally, there is only one reason for modern forest management.

A sale.

If forest products were not ultimately sold, and consumed, there would be no need for conservation and utilization of the resource.

And there would be no *income* to carry on the forest program.

That's why St. Paul & Tacoma Lumber Company strives to develop the whole picture. Working both as an individual company—and in cooperation with others in the industry—we direct our efforts toward a continuing betterment of forestry practice . . . and toward a sustained sales demand for the products of that practice.

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NOW BRIGHTER MARKS LAST LONGER!

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Nelson's new tree marking paint stays on the surface. You get more and brighter marks per gallon.

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No stirring, straining or transferring of paint. The NEL-SPOT gun using Nelson paint is always ready for use with no preparation of any kind.

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As a user and converter of wood, we are naturally interested in the maintenance of sources of raw materials. We are also aware of the broader implications, and the obligations placed upon manufacturers to assist in the development and improvement of our natural resources. To this end we recommend the extension of education among owners and operators in the need for sound forestry practices. Such education should also extend to the public at large and to public officials.

We believe that dependence can be placed upon private initiative to maintain forest values for the future if necessary cooperation by the public and by private industries exists.

Our Company has been manufacturing paper since 1864 and operates its own Tree Farms—the first so dedicated in Pennsylvania and in Maryland.

P. H. GLATFELTER CO.

THE GLATFELTER PULP WOOD CO.

Spring Grove, Penna.

Pacific Rim Forester

(*From page* 68)

cluding timber imports and exports. At that time the yearly log cut of the primitive forest industry in India and Burma was no more than 15 percent of the annual growth rate, yet due to the German blockade India could not produce enough forest products for its own requirements.

The lack led to action. In 1920 two American logging engineers were employed to measure the opportunities for increasing the timber harvests from Indian forests. One was named John Lafon. And for three years Clyde Martin examined India's forests, from the northern Himalayas to India's southern tip. At all points he found the outstanding need to be for logging engineers. The Indian government sent 13 British Army engineers to cover America's forest regions and study our logging engineering methods.

Such was the background of an offer to Clyde Martin for organizing a Department of Forest Engineering for the Madras Presidency—the only so-called Presidency in the land of rajahs.

"Lumbering in the Madras Presidency," published in The Timberman's September 1921 issue, was one of several colorful and informative articles written by Martin during his 1920-1930 service as consulting forest engineer to the Indian government.

In the latter years of his decade on the Indian quarter of the Pacific Rim's forests, Martin toured Mesopotamia, the Sudan, all of Africa to the Cape of Good Hope, mainly to look up new markets for Indian forest products. In 1930 he came home.

It was a great change, from vast excursions in the eastern forest regions of the mighty British Empire to the small, quiet rounds of business in a western Oregon sawmill. But this was what Martin had come home for, and through two years and more he was content with it and a consulting forestry practice on the side. But at last a world-wide economic depression swept into the United States and smothered home construction and other major markets for lumber. In 1933 the Civilian Conservation Corps and the National Recovery Act—the CCC and the NRA—were among many federal programs that moved on the nation's forest industries in force.

Clyde Martin's ten years in India had not made him a forgotten man of American forestry. He had re-

(*Turn to page* 72)

SELECTIVE HARVESTING

means more trees tomorrow

This International Paper Company Forester is marking trees for cutting on a company tree farm. One-third of the trees will be removed. The remainder will grow faster, sturdier . . . for selective cutting is the key to healthy forests.

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Since the American Forestry Association inaugurated the use of these matches several years ago, a constantly increasing number of public-spirited citizens, organizations and companies have participated in this campaign. Their successful use of these colorful matches to teach fire prevention as a public service has proved to be a most effective advertising medium.

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The price is the same as our other designs, even with the extra state imprint. A case contains 2,500 individual matchbooks, 50 cartons of 50 each, and costs only $25, plus shipping. Two cases are $45, four cases $80 and ten cases are $175. We pay shipping charges on orders of four or more cases. The prices are for one order of the same imprint to be shipped to the same address. Individual postal approved mailing containers that hold one carton are available at $7.50 per hundred.

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9-54

Pacific Rim Forester

(*From page* 70)

turned with an expanded reputation, as forestry diplomat, planner, policy maker and adviser, in addition to his technical standing as a forest and logging engineer. So he was invited to manage the construction and organization of the first CCC camp in Oregon—at Oakridge, site of the present large Pope & Talbot operation. Then, as the passage of the National Recovery Act compelled the adoption of logging and lumber "codes," on the patterns specified for all industries and businesses, the Western Pine Association turned to C.S.M. as the forest engineer best equipped to organize its forestry responsibilities in 11 western states in accordance with NRA requirements.

Like the other regional lumber associations, the Western Pine Association formed regional and state-wide Forest Practice Committees as a vital part of its function in the operation of NRA. Martin had five forest engineers on his staff. He hooked up in a team with Warren Tilton, forest engineer of the West Coast Lumbermen's Association, and with other western administrators of industrial forest practice rules. One result of this work was the first detailed western forest management plan to be applied on a large property. This was made in 1934 covering the Weyerhaeuser Timber Company's properties at Longview, under Company Foresters C. S. Chapman and William H. Price, with the assistance of Mason, Stevens & Bruce, Consulting Foresters.

The forest practice rules of the western lumber associations exceeded the code requirements in most particulars. These industrial timber organizations voluntarily kept them in force, and built them up year after year, in the western states. In fir, pine, and redwood forests productive practices were extended by industry, most of all in defense against fire, insects, and disease. As Colonel W. B. Greeley puts it, "The general reaction to the summary execution of NRA by the high court was to adopt forest conservation as part of the industry's own business creed. . . . The death of the Blue Eagle started a spontaneous sweep of industrial forestry which has carried on to the present time."

But it was a movement that was planned and led according to studied policy in every phase. Clyde

(*Turn to page* 74)

CONGRATULATIONS to the members of The American Forestry Association for the fine job done throughout the years in establishing better forestry practices.

It is essential that sound conservation practices and intelligent management of our forests be supported by all of our populace in order to protect one of the nation's greatest resources.

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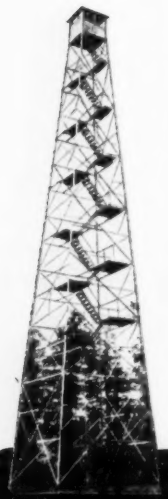

Permanent and substantial structures to provide shelter and security for the observer and his instruments. Capable of resisting fire, storm and high wind. Steel parts hot process galvanized after fabricating. Standard equipment in many states.

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Towers are assembled by building up from foundations a piece at a time. All connections are secured with galvanized bolts furnished by us.

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Write for specific information on towers to meet your needs.

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2500 ROOSEVELT ROAD
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Pacific Rim Forester

(*From page* 72)

Martin kept a commanding part in the West even after leaving the Western Pine Association in 1940 to become chief forester of the Weyerhaeuser Timber Company, succeeding C. S. Chapman. This was the year in which, first, Keep Washington Green was born, then the Keep Oregon Green Association. And it was in this year that specific plans on the Clemons cutovers in Grays Harbor County, Washington, were hung up on wall maps for technical study and discussion. Martin took Chapman's place among the Clemons planners.

The Martin career moved upward and on along a joint highway of forestry relations and public relations, as American Forest Products Industries, Inc., was organized at Minneapolis in 1942, for national promotion of tree farms, "Keep Green," and the publicizing of other industrial forestry programs.

Martin was one of the foresters instrumental in helping the West Coast Lumbermen's Association establish the Forest Industries Tree Nursery at Nisqually in 1941 and has served continuously to the present day as chairman of the nursery committee which is the governing board of the nursery. On April 8, 1954, the committee made C.S.M. an honorary life member.

Another important Martin activity has been his membership on the Joint Committee on Forest Conservation from 1940 to 1949 and on the Board of Directors of the Industrial Forestry Association, its successor, since. Also, he has been active on the Board of Directors of the various fire associations—Washington Forest Fire, Oregon Forest Fire, and several of the county patrol associations in Oregon. For many years he has been a trustee and a member of the Executive Committee of the Washington State Forestry Conference. He has been chairman for about six or seven years of the Forest Conservation Committee of the National Lumber Manufacturers Association. C.S.M. served as a member of the steering committee which programmed Re-

(*Turn to page* 76)

PENNSALT CHEMICALS
On Guard in America's Forests

PENCO®
Penite 6X and Penite 35 — special arsenite formulations for weed control and chemical debarking.

PENCO®
DDT Forest Spray — for controlling Pine Butterfly, Spruce Budworm and other damaging insects.

PENCO®
BHC E-11 — for treatment of mill-ready logs to destroy bark beetles.

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Systemic Insecticides and Selective Brush Control

Producer of Chemicals for Agriculture and Industry for over a century

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Farming the Timberlands with Champion

An Assist to Nature

Choice pine cones are selected for seed in Champion's reforestation program . . . an important step in assisting nature to provide unending crops of trees. During the planting season just past Champion planted 3,271,000 seedlings!

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Pacific Rim Forester

(*From page 74*)

sources for the Future in Washington, D. C. last December. Also, he was chairman of the Forest Industries Council for four years.

In all of these new phases of the vital spirit of American private forest enterprise in productive growth and constructive change, C.S.M. worked in his old familiar way of kindly courtesy, soft words, gentle discussion—and rich results.

All the while Martin kept up his contributions to the forestry profession through the Society of American Foresters and the Western Forestry and Conservation Association. He served a term as chairman of the Columbia River Section of SAF, and later as chairman of the Puget Sound Section. In 1948 the progress of industrial forestry in the United States was recognized by the election of Martin as President of the Society of American Foresters. He was the first industrial forester to hold the highest post in the profession—the first who had begun his career as a logging engineer and timber cruiser for a forest industry company.

During his two years as SAF president, Martin fostered a Code of Ethics for the Society, in form like the codes maintained by the professional societies of medicine, engineering and law. He directed the reorganization of the membership and dues structure of SAF, with change of format and advertising policies for the magazine, and with encouragement for more local chapters within the regional sections—giving young foresters in the woods better opportunities for activities in the professional society. He is now one of the 54 living Fellows of the Society of American Foresters. They are the revered Elder Statesmen of the evergreen profession. But Clyde Sayers Martin, fair-haired and debonair, still remains a Frank Merriwell of forestry among the elders. In quiet ways he has explored and adventured. He has worked around the great ocean—a Pacific Rim forester.

Anyhow, it is well-nigh impossible to think of C.S.M. as a grand *old* man of forestry, and it will be as hard when he is a hundred. The spirit of young adventure is in him still, the love of frontiers, and the urge to look on and on beyond frontier horizons. So he enthuses over such pet projects as that of use of radio in the forest products industries. He is a co-founder of the western organization, now national, that was set up some years ago to secure and hold effective radio frequencies for the industry's use.

And now C.S.M. looks forth on the Weyerhaeuser tree farms around integrated plants for production of lumber, plywood, pulp, paper, hardboards, shingles, and bark products, and he remembers the dream in the Clemons wilderness of 1907. Sustained yield. Continuous production. Fire contained. Cutovers reseeded and safe for tomorrow's tree crops. The Martins, the Greeleys, the Allens and other pioneering foresters dreamed of such things in those days, and in professional meetings talked cautiously about them. And some have lived to see the day, glory be!

In recent years the blue-eyed Weyerhaeuser veteran has served as the company's "Forestry Counsel," in charge of all relationships with forestry organizations, with other industry companies, and with federal and state agencies. Sometimes he bears with ten hours of *talking* in a day. He contrasts this with the average forester's day before World War I, which would call for ten miles of *walking* up and down pinnacles, at least. Change, change, nothing but change in the woods—even from walking to talking for the forester.

On October 1 Clyde Martin will retire from Weyerhaeuser service. But he can't quit forestry, it is life of his blood and marrow. His shingle of "Forestry Consultant" will be hung out in 1955. And the color of the shingle, I venture to predict, will be Frank Merriwell's own—Yale Blue!

KEITH CRANSTON, Forestry Consultant
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(Headquarters)
Timber Appraisals — Inventories
A Southwide Professional Service

TIMBERLAND MANAGEMENT, INVENTORY AND APPRAISAL
—OVER 50 MILLION ACRES SINCE 1910
JAMES W. SEWALL COMPANY
FOREST ENGINEERS
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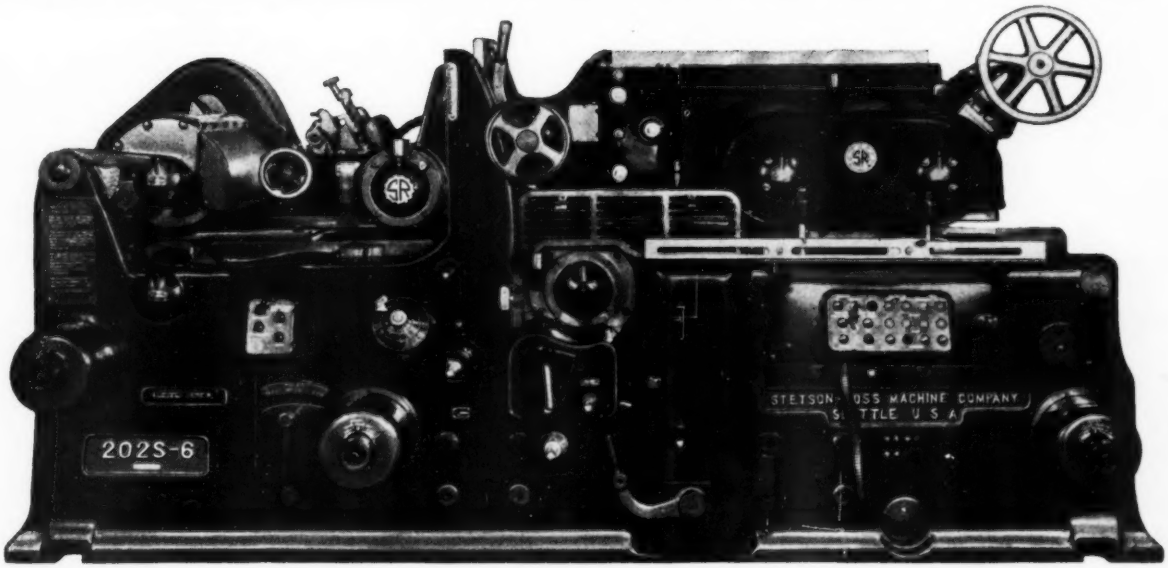
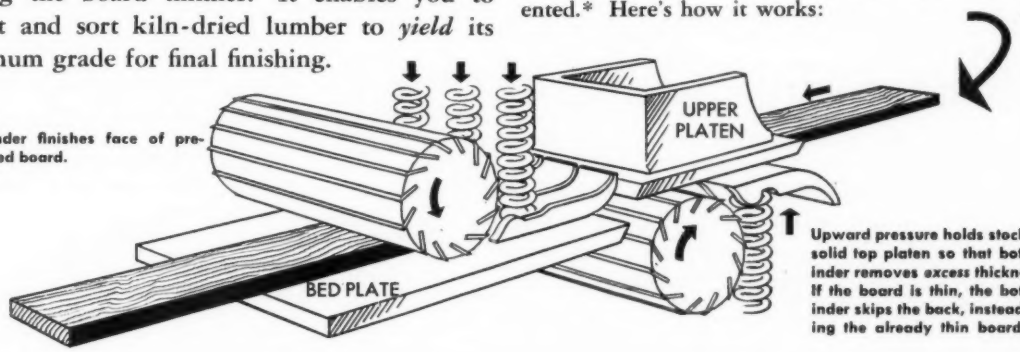
WORLD'S ONLY LUMBER CONSERVING PLANER



. . . Passes extra thin boards through the machine, without planing either top or bottom . . . does a precision surfacing job on full thickness stock.

The 202S-6, when used as a blanker, reveals the hidden values in a board without needlessly making the board thinner. It enables you to inspect and sort kiln-dried lumber to *yield* its maximum grade for final finishing.

The unusual advantage of this machine is the exclusive TWO-WAY THICKNESSING© principle, perfected exclusively by Stetson-Ross engineers, and patented.* Here's how it works:



Top cylinder finishes face of pre-thicknessed board.

Upward pressure holds stock against solid top platen so that bottom cylinder removes *excess* thickness only. If the board is thin, the bottom cylinder skips the back, instead of making the already thin board thinner.

THIS NEW SURFACER THICKNESSES THE BOARD TWICE — FIRST FROM THE BACK AND THEN FROM THE FACE

1. Extra thin boards pass through without surfacing on either top or bottom.
2. Slightly thin boards are surfaced on the face only, bringing the board to the desired thickness, even though skipped on the back.
3. Full thickness boards are precision-surfaced—top and bottom.

Thus you can mill to closer tolerances and greatly reduce down-grading and waste due to thin stock.

LEADERSHIP IN THE PLANER MATCHER FIELD SINCE 1907

Reduce Costs with Stetson-Ross

*Patents Nos. 2299218-19-20 and other patents applied for. Copr. 1954, Stetson-Ross Machine Company.

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Delicious non-perishable food is concentrated for easy carrying. 25 pounds finished food weighs only 9 pounds. Nothing to add but water. 12 full meals in waterproof foil packets. Used by forest rangers as regular food for lookouts, emergency food when fire-fighting. Used by foresters, too.

Write for KAMP-PACK booklet and Bernard INSTITUTIONAL FOOD LISTS for *he-man* lumberjack meals.

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KEEPING AMERICA GREEN

EXCLUSIVE FEATURES
- Self Supporting
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Available in 150 & 300 gallon sizes

A WATER SUPPLY AT THE SCENE OF THE FIRE

Write TODAY for Full Information and Price List
HARODIKES INCORPORATED
NORTH DIGHTON, MASSACHUSETTS

Fire

(*From page* 35)

More than 1,200,000 acres of forest land in Oregon since 1940 has not been burned because of Keep Oregon Green. Upwards of a million more acres of Washington's timberland is a green, healthy, growing forest because of the fire prevention work of the Keep Washington Green.

Fire losses dropped sensationally the first year the Keep Green program was started in the two states, for it came down to Oregon that same year of 1940 on the urging of Edmund Hayes, who served as Oregon state chairman of the fledgling public educational program during its first six years.

From a modest beginning in 1940, the Oregon program got a tremendous boost when Governor Charles Sprague called 250 state leaders together in May, 1941 to put the entire resources of the commonwealth behind the effort.

Sparked by the genius of Stewart Holbrook, logger, famed historian, lecturer and writer, who was called out from Boston to become first secretary of Keep Washington Green, the people of Washington were soon agog over the new movement. By mid-summer of 1940, newspapers were enthusiastic and radio stations were giving radio dramatizations and spot announcements by the hundreds. Holbrook used every adroit technique of the press agent to get public attention. It was the start of an amazing experiment in mass education. It was the start of a psychological backfire which spread eastward and southward until today more than 30 states have Keep Green programs of their own.

For the next four years, Holbrook spent six months of the hot, fire-weather season dreaming up new ways to reach the public with his message of forest fires. It became a mortal sin to leave a campfire unattended and anyone who flipped a cigarette from a car or while walking or working in the forests was a cinch to spend his after-life shoveling coal for the furnaces of Hell, so Holbrook roared.

Luck was with the Keep Oregon Green committee when they selected Richard Kuehner, top 4-H club leader in the nation, as the first director. First step was the formation of a grassroots action organization. County committees were set up with an enthusiastic leader for each group.

(*Turn to page* 80)

We Want the Answers, Too!

Someone has said: "The Lord provides the sparrow with food, but He doesn't put it in his nest for him."

A Divine Providence has given us our forests but it is our responsibility to care for them and to make them produce in greater abundance.

To this end we have accelerated our program of forest research. We want to know how to obtain the maximum amount of forest products from our woodlands, increase quality, and more successfully combat fire, insect infestation and disease.

Too, we seek the answers to other questions that now challenge geneticists and silviculturists, and when we find them we will be glad to share this new knowledge with our land-owner neighbors, many of whom sell us pulpwood and all of whom are growing "more trees for tomorrow."

UNION BAG
& Paper Corporation

WOODLANDS DIVISION TRADE MARK UNION SAVANNAH, GA.

WELCOME

from the 500 tree farmers who display this sign

Another Certified WESTERN PINE TREE FARM

In the Western Pine Region where less than 30% of the commercial forest lands are in private ownership, there are nevertheless 5,300,000 acres under this sign. That is why our slogan reads, "Manufacturing quality lumber today—growing trees for tomorrow."

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TRAP CAN'T HARM CHILDREN OR PETS

Amazing **HAVAHART** trap captures raiding rats, rabbits, squirrels, skunks, etc. Takes minks, coons without damaging pelts. Straying pets and poultry are released unhurt. Easy to set—open ends give animal confidence. Fully guaranteed. No jaws or springs to break. Rustproof. Sizes for all needs.

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U. S. FOREST SERVICE FIELD CLOTHES

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For Rough Field Wear

Complete price list on request

The Fechheimer Bros. Co.

Uniforms for Over 70 Years

CINCINNATI 2, OHIO

Fire

(*From page* 78)

Newspapers swung into action, so did radio stations. The air was full of this fresh, new approach to a difficult statewide problem.

The idea of fighting forest fires with publicity was so novel and so revolutionary that many an old-time fire protection warden or ranger was heard to make the very same noises which went the rounds of the logging camps when word got out that a brave logger here and there had taken up golf. The scoffers became silent when the returns from the first year were tallied.

Oregon's man-caused forest fires dropped to 561 in 1941. They had averaged 1300 a year in the decade just before. Acreage losses fell to less than 10,000 acres from the previous 125,000 annual sacrifice in the 1930s.

This first year's record was no flash in the pan, for 1942 was almost as good with only 779 man-caused blazes. Acreage losses held below 10,000 acres. It was hot and dry in 1943, but fires were still well below old figures with 1,065 man-caused starts. Then for five straight years, during normally dry periods, losses were held to less than half the old.

In 1953 a year of normal exposures and some high danger periods, there were only 633 man-caused fires and the acreage burned was at an all-time low of 2500 acres. This is a phenomenal record in a forest of 30,000,000 acres.

But, the reduction in number of man-caused fires in the two states is only part of the story of the accomplishments of Keep Green and of the fabulous cooperation and support given the program by the general public. The general alertness of the public has served to reduce the acreage burned. As many as ten private citizens may report in a single forest fire as soon as it is spotted. Detection systems on private and public protection areas are better equipped with modern radiophones so that fires are hit as fast as they are spotted.

Because of this great reduction in numbers of man-caused forest fires and the ability to hold down spread of fire due to alert detection, nonstocked areas in the two states are shrinking at an amazing pace. The newest survey of the U. S. Forest Service shows a reduction of almost 60 percent in nonstocked land in large areas of the fir region in the two states. Much of this is due to the

(*Turn to page* 82)

Timber is a Crop

Harvest it Wisely

CAMP MANUFACTURING COMPANY

FRANKLIN, VIRGINIA

FOR QUICK ACTION... POWERFUL FOG SPRAY with NEW CHAMPION

Here's a portable fog-type extinguisher for stopping fires quickly before they spread. It consists of a 5-gal. galvanized steel tank with powerful trombone slide-action pump and brass nozzle adjustable from a fog spray to stream. Can be carried as a knapsack or by its handle. 4-ft. hose attaches at top of tank, prevents water from running out when pump is below bottom of tank. Quality-built by manufacturer of dependable spraying equipment since 1915. For complete details and outstanding features of this new Champion . . .

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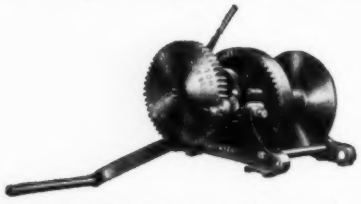
You Can Lift 2 to 15 Tons Easily, Safely, Economically



...With BEEBE Hand Winches

Beebe hand winches are made in 2-, 5-, and 15-ton capacities and eight drum sizes. There is a model for every need. World's leading hand winch. Unconditionally guaranteed unbreakable in hand operation. Easily converted to power. Lighweight 2-ton model weighs only 60 pounds. Write for FREE catalog and case histories showing these winches in operation.

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Fire

(*From page* 80)

fact that destruction of seed sources and young timber has been greatly reduced.

Backing for Keep Green comes from unusual sources, like the man in Grants Pass, Oregon, who filed for the state senate on Keep Oregon Green ticket. He was elected. Jim Stevens, famed biographer of Paul Bunyan, and for years a voluntary publicity man for KWG as this writer has been for KOG, is the author of one of the most unique devices for perpetuating interest in the fire prevention campaign. He annually writes a school pageant, the likes of which is produced no place else in America, which is presented by 800 school children of Shelton, Washington on an heroic size outdoor stage a block long. Scenery of mountains and Paul Bunyan may loom up 75 feet in the air.

Keep Oregon Green and Keep Washington Green have been painstakingly protected from misplaced emphasis or misuse. The organizations have stayed out of any kind of politics. They have resisted efforts to cash in on their popularity like the roadside beautification groups who have repeatedly tried to steal the program and make it Keep Oregon Green and Clean.

Never before has so much been bought for so little. Advertising experts study the techniques of our little program which annually spends in Oregon some $30,000 and about $20,000 in Washington, but gets half a millon dollars worth of newspaper space and radio and television time. At least $5,000,000 worth of timber is not burned up each year in each state because of this very small expenditure in prevention.

Does Keep Green pay off? Mason county was once known as "Washington's Tinderbox" yet in 1950 only 24 acres burned of its 612,300 timbered acres. Not chance, for in 1951 only 23 acres burned, while 24 acres went up in smoke in 1952, and in 1953 an amazing five acres were destroyed. Several Oregon counties had no fires of consequence last year and many a tree farm went unscathed through the summer.

It is remarkable what a few words can do when written or spoken at the right time. The astounding spectacle of words chasing fire right out of the woods is still a little bit unreal.

AMERICAN FORESTS

is one of the many magazines

from our presses

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Any person, organization, or company may become a member of The American Forestry Association upon application. There are five classes of Membership:

1.	Subscribing, per year	$ 5
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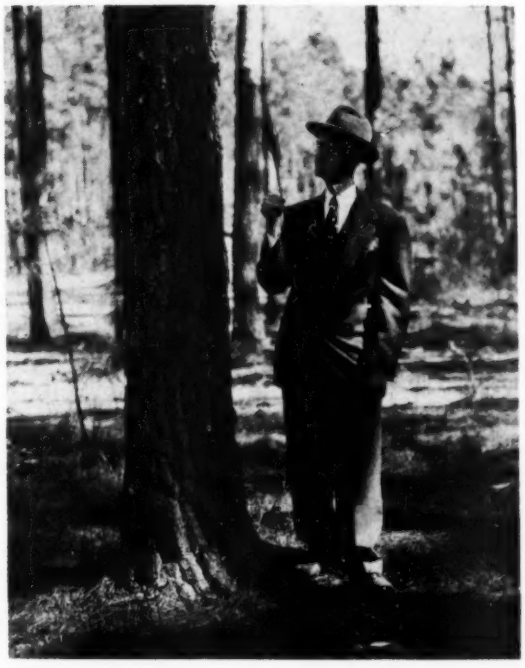
5.	Patron (for individuals) no further dues	1000

All members receive monthly copies of *AMERICAN FORESTS* Magazine.

TREE FARMS INSURE THE FUTURE!



Yes, we have faith in the future of our nation's forests. Why shouldn't we? The country over the number of Tree Farms is increasing daily.

And as for Tree Farming in Dixie—things are really humming.

Shown in the picture above is J. K. Johnson (retired). He is standing by a slash pine he planted in 1924 when Chief Forester for the Great Southern Lumber Company, on lands now operated as Tree Farms by Gaylord. In his hand is a seedling pine typical of those being planted each year in the South by the tens of millions.

Our 113,000 acres of planted pines, our additional holdings of several hundred thousand acres of naturally restocked lands, plus the constantly increasing number of tree farms owned by our neighbors give us assurance of the future.

GAYLORD CONTAINER CORPORATION

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Nature is Our Chief Forester

"With the coming of Crossett's first forester, propagation of young growth was furthered by the practice of leaving the virgin growth seed trees at evenly spaced intervals throughout the forest. Within a few years, these big trees had effectively re-seeded much of the area previously cut over. From then on reforestation activities were progressively expanded. The country's best experts in forest practices were called in. From these consultations came Crossett's modern system of selective cutting and sustained yield which adequately provide raw material needed for continuous operations."

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Crossett, Arkansas

AMONG OUR AUTHORS

William B. Greeley (*Eight Decades of Progress*) is one of the noted foresters of this country and for many years has been a contributor to AMERICAN FORESTS and other national publications. A former chief of the U. S. Forest Service, he now is executive vice president of the West Coast Lumbermen's Association. **Donald H. Clark** (*The Yacolt Burn—Forest Graveyard*), one of the three unrelated Clarks who contributed to this issue, teaches forestry courses at the University of Washington at Seattle and is a public information specialist at that institution.

Mr. Stevens

James Stevens (*Pacific Rim Forester*) is a familiar name to any reader of conservation periodicals. The author of several books and countless articles, he for many years has been one of the chief sources of information about Northwest conservation activities. He is perhaps our best known authority on Paul Bunyan and Davy Crockett. **Arthur Priaulx** (*Operation Chips*) is a native Californian. Majoring in journalism and political science in college, he has been an active news writer and publisher since 1922. **Merlin Blais** (*Magnificent Mount Hood*) is a veteran Pacific Northwest newsman, a forestry and wood-using industries specialist for the Portland *Oregonian* and is considered to be one of the more promising conservation writers of his region. **Stewart Holbrook** (*A Lament for Things Gone*), whose virile writing appears both in national magazines and on the best seller book lists, is an author with an intimate knowledge of land use. One of his latest books, *Far Corner*, is a personal view of the Pacific Northwest and deals in some detail with the changes that have come to the lumber industry. **E. T. Clark** (*Is Olympic Park Too Big?—Yes*) is secretary-manager of the Pacific Northwest Loggers Association, a senior member of the Society of American Foresters, and a timber valuation engineer for the U. S. Treasury Department. **Irving Clark, Jr.** (*Is Olympic Park Too Big?—No*) is a native Washingtonian now practicing law in Seattle. He has written and spoken quite extensively on conservation subjects during the past few years. **Paul M. Dunn** (*Oregon State—Home of the Fernhoppers*) is dean, Forestry School, Oregon State College.

Mr. Holbrook

Mr. Priaulx

Mr. Dunn

Mr. Greeley

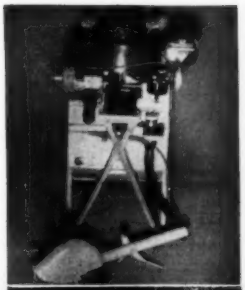
Northwest Wrapup — Due to the immensity of the subject, coverage of the Northwest's myriad conservation subjects has been a continuing project with AMERICAN FORESTS all this year. Following this current annual meeting issue, AMERICAN FORESTS will present a final Northwest wrapup in its October issue. This will include the coverage of the AFA's first Northwest meeting and articles by Prof. James Campbell Hay Robertson, of the University of Washington, on the evolution of cutting methods in the Northwest; Leo Isaac, outstanding Northwest researcher and an expert on the Douglasfir; and Forester C. R. Ross, of the Federal Cooperative Extension Service.

Little Beaver Tree Girdler

HAYNES TREE GIRDLER Little Beaver

Reg. Trade Mark

Here's New Economy—New Features Never Offered Before in a Tree Girdler



• Cuts at walking speed around the tree • Girdles trees from the largest to the smallest • Girdles irregular shaped trunks, over and around cat faces and hollows • Cuts sufficient depth and width to insure kill • Light, easy to carry and operate • Operator has instant control over starting and stopping cutter wheel.

One man with a little Beaver tree girdler will girdle more trees per day than several men using present girdling methods, assuring you of a quality girdling job done quickly and easily at a low cost per acre.

For Details on This Revolutionary New Machine see your Dealer or Write

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Patents Pending

TELLING OUR STORY OF CONSERVATION

• This fire weather indicator is part of our fire protection system and is public evidence of our new forestry program.

• On June 12, 1953, Puget Sound Pulp & Timber Company dedicated the first industrial Tree Farm in Skagit County.

• Purpose of the Tree Farm is a continuous supply of wood for our bleached sulphite pulp mill at Bellingham. This plant also produces container board, industrial alcohol, lignin derivatives, and other by-products.

• It is the aim of the company to materially increase the productivity of our Tree Farm areas to provide long range security for our employees, the community, and the stockholders.

PUGET SOUND PULP AND TIMBER CO.

Mills and Offices at Bellingham, Washington

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Things Gone

(*From page* 29)

industrial forestry which are not within the province of this article. I'll leave them here by saying their acceptance by the lumber industry is the most encouraging piece of the revolution that has taken place since I nailed my fine derby to the stump at about N. 51° W. 127°, 30-odd years since.

As an old settler, as a things-ain't-what-they-used-to-be Tory, my greatest regret is that the revolution has all but removed the logging camp. Here was a bit of frontier civilization that stood alone in character. It stood in Maine as it stood in Oregon, a unique community. In it 100, or 200, men lived and worked in comparative isolation that was broken twice a year by trips to town. You went to camp by a logging railroad, and left it that way. Its population was composed of several score single men, and perhaps half a dozen young women, in the cookhouse, who commonly married soon and sometimes married well. The camp was nothing at all like a conventional village. It was a logging camp. There was nothing else even remotely like it.

It wasn't until 1937 when I saw a logging outfit without a camp, and it was something of a shock to find an operation being carried on by men who drove to the scene from their own homes, complete with families, every day. I did not sense that this was a vision of things to come, but put it down as an anomaly due to unusual circumstances. It was no such thing. The damnable idea caught on. Now, little more than a decade later, a genuine logging camp is something you have to search for, at least in the fir region. From Bellingham to Coos Bay, loggers live at home, and home is not always, or even often, a camp.

The few surviving fir camps are less camp than villages. (So are many of the more numerous camps.) Many have garages attached to the family homes of employees. There are schools for the children, community halls for religious services, bowling alleys, moving picture theaters, and small department stores. Only here and there is there a camp about which clings the old-time flavor. The old-time flavor is not popular. To the younger generation, and to most of the elders, it has the connotations of horse-and-buggy.

Occasionally I have come across

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a deserted logging camp. There is no scene more conducive to that probably irrational nostalgia for times past. One can readily call up what was—the bunkhouses so alive with familiar sounds and sights, the cookhouse with its big glowing range, the smell of fresh bread, the blacksmith shop and its reek of coal and iron, and the sidetrack where a locomotive drowsed the nights away.

I recall one such camp that had been deserted for less than a year, and it was already a place of deepest melancholy. Window holes stared blankly from the shacks. Not far from the cookhouse was a pile of rusty cans. Curling like an anaconda through the underbrush was 100 yards of wire rope, the lifeline of a high-lead camp. Fireweed, that strange and lovely flower of boundless range, grew close to the plank walk and up through cracks of it. More fireweed almost hid the few rusting rails of sidetrack. There was moss on the bunkhouse roofs, from a few of which a stovepipe arose, and leaned.

It was not a scene of desolation. That is too strong a word. It was more as if life had suddenly been arrested, not destroyed as in death, but held in abeyance, perhaps like the life of a hibernating bear, ready to stir again when the warmth of spring told of a winter gone. The interiors of the bunkhouses added to the illusion of arrested animation. On a shelf above a broken-down cot stood a Prince Albert tin, a few flakes of tobacco in it, and a steel tool called a set, with which to drive calks into boots. A big barrel stove had been left, some few sticks of kindling between its forelegs. A feeling came over me that must also have come over the first excavators at Pompeii, a feeling that I had somehow stepped into a hiatus in the life of this particular community; that its citizens were still somewhere about, watching, waiting to see what the intruder was up to.

The big range was gone from the cookhouse, yet everything else was in place. A faucet at the sink still dripped, as I suppose it had dripped since the last flunky washed the last dish and called it a day. There was flour on the mixing board where some cook had one day taken off his apron, put on his coat, and walked out the door. The long tables in the dining room were still nailed to the floor, apparently waiting until Gabriel should blow. On the wall was a gaudy calendar. Some forgot-

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ten inhabitant had marked off the days of January, or nearly all, with a black crayon, swiped from the scaler; the marker was doubtless a restless man trying to hurry Time until the day he should quit and go where lights were bright, and even red.

Inside and out the silence was complete. I sat on an empty powder box and mused. Where, now, were the lads who had lived here a week, or a year, and had cut the firs and left the stumps which were already beginning to disappear into the encroaching ground-cover of new growth? Who was the filer who kept the teeth of the saws sharp and rakish? Was he filing elsewhere now? Or, not at all? What of the cook and his spanking-white apron? Had he fed these boys well, and on whose range was he cooking now? Was it in a city restaurant?

The feeling grew on me that these loggers had left their community as it was, had walked out of it and out of the world, and were living on in some Valhalla beyond my knowing. I took my time, however, for I had come to the knowledge that such camps as this were disappearing, that I might, well live to see the very last logging camp go out of business. I wanted to remember just how one looked, even this deserted community. What logger, I wondered, had thrown away a worn, but perfectly good, pair of boots in his haste to get out of here? Had a great thirst suddenly come upon him? There lay his boots by a bunkhouse door, green with mold but patently serviceable. Where were the other boys—he who had owned the calk set; he who liked Prince Albert finecut? What of the lad who had scored Time on the cookhouse calendar? Had he caught Time, or had it caught him?

I reflected that if I had never known a logging camp, these ruins would not have caused me to muse. I should have passed them without a glance or a thought. What held me for an hour was the same circumstance that holds archeologists fast to their work; I could recognize the significance of the relics and artifacts; I could read the hieroglyphics; and thus I could put together and comprehend the life and times of this abandoned and forgotten piece of civilization.

Although I have never returned there, I know well enough that the site of that particular camp could not now be found, save with a compass; or recognized if found, unless some seedling apple tree had taken root near the cookhouse and sur-

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vived. By now the place will be deep in the shadow of tall trees, waiting for another generation of loggers. The dynamic forest, if given a chance, soon covers the scars left by loggers, and even obliterates the symbol of their occupancy of the woods, the camp. At the current rate of their disappearance, the Northwest logging camp will presently be a thing of the past.

I imagine that few of today's loggers, who are now thoroughly, and I trust, happily domesticated regret its passing. Here and there, perhaps, is one whose memory will conjure up a dawn when the sun came over the mountain to slant through the swirling mist, while the bullcock beat rhythmically on the gong and 200 young men came stomping down the camp walks, their calks clicking, heading for an incredible breakfast, a box of Copenhagen, then a thundering ride behind the shay to where the spar tree reared high above the big round stuff lying between the stumps. . .

In its era, the camp was a wonderful place. If you can find a surviving example of the genuine article, I urge you to go see it. It may be your last chance.

Olympic Park—Yes

(*From page* 30)

a sustained-yield basis, for all industries on the Peninsula, is estimated at 886,500 M board feet which is 319,800 M board feet less than the requirements. In this allowable annual cut, there is included 90 million board feet from the state Sustained Yield Forest #1, which will be put into production after the deteriorating timber on the Forks Burn is logged. This annual deficiency of about 320 million board feet is the price that is paid for keeping vast volumes of timber locked up as in a museum. The only conclusion, from a cold-blooded appraisal, is that if such great quantities of timber are to remain unused in the park, many of these forest workers will lose their jobs.

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qualities; it can be fashioned into all sorts of products, by the average farmer or homeowner, without the skill required for other materials. Besides shingles, plywood, lumber and the traditional timber products, research is discovering all sorts of new products from wood such as sugar, alcohol, animal feeds, cellophane, plastics, rayon clothing and munitions of war.

The peace-time use of wood products is increasing with increased population and is very important to the nation, but its war-time value is tremendous, as was proven during the two world wars and the Korean episode. Lumber, plywood, and other wood products have been required for troop-housing, transportation, wharves, warehouses, besides their use in the manufacture of munitions. A high-grade wood pulp supply is necessary to the adequate production of nitrocellulose. The reconstruction periods also have taken vast quantities of these products. During World War I, the defense agencies built their own logging railroads, camps, and had soldiers performing logging operations. This effort was repeated in World War II through producing and transporting logs from Alaska to mills in the states. The vast volume of unused stumpage in the Olympic National Park in times of future emergency might be a terrific temptation to the defense agencies which, at such times, are always implemented with power by Congress. Orderly planning of boundaries to assure a park of reasonable, justifiable size might avert such action.

Another consideration is the national need for high-grade forest lands. During the last two decades, private industry and the federal agencies have made important strides in protecting the forests from fire and other depredations, and in developing the techniques of reproducing areas after logging. Good forestry and protection are now the order of the day in logging operations. Tree farm developments and sustained-yield forestry are guaranteeing continuing crops of trees. Better logging and manufacturing methods assure closer utilization. Across the nation, forestry is assuring future stands of timber, and the forest industry and governmental agencies should not be blamed for the policies of the past, because the economics of the times determine the methods that can be employed.

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(Turn to page 92)

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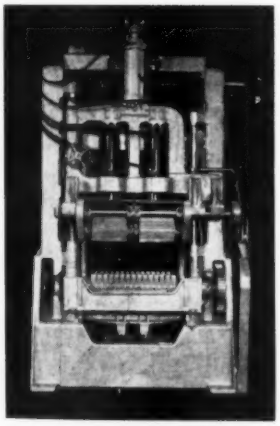

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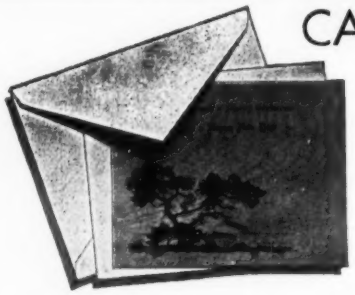

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Olympic Park—Yes

(*From page* 90)

coastal counties, such as in the Olympic Peninsula, the most productive-growing sites for coniferous trees to be found in the world. Here can be found young trees which grow, in a year, from one-quarter to one inch in diameter, and sometimes as much as six feet in height. Only in a few other restricted areas in the nation can be found sites which will produce such growth. Hence, as the total area of such lands across the nation is limited, we should make efficient use of all of it. If, nationally, we are to have sufficient wood to meet the normal and emergency needs of future generations with a greatly increased population, then we of this generation must make sure that all of our commercial forest lands are placed under good forest management.

A further consideration is the great waste and risk of loss of this vast forest resource in the park. In the first place, it is all past its prime or decadent, and individual trees are constantly rotting away and blowing over. Rather than a growing, producing forest, we have a deteriorating wasting resource. Nature constantly reproduces the area with an inferior, ragged, low-grade stand to replace the disappearing veterans. Then, besides natural decadence, there is the risk of a catastrophic loss. For example, in 1921 a single violent windstorm on the Olympic Peninsula blew down an estimated five billion board feet of timber. Then, too, in the rain belt of the west side of the Olympic Mountains, there are a few days of intense fire risk. During these few high-risk days, there is the chance of something like the Forks fire occurring which, in a few hours in September 1951, burned over almost one billion feet of timber just outside the northwest corner of the park. Also, in solid hemlock stands, the hemlock looper is a menacing pest. The lack of roads and even trails in many parts of the park makes forest protection and fire suppression very difficult should a conflagration once get started.

Also to be considered is the waste of recreational values. The statutory objective of the Park Service is stated to be "To conserve the scenery and the natural and historical objects and the wildlife therein, and to provide for the enjoyment of the same in such a manner and such

(*Turn to page* 94)

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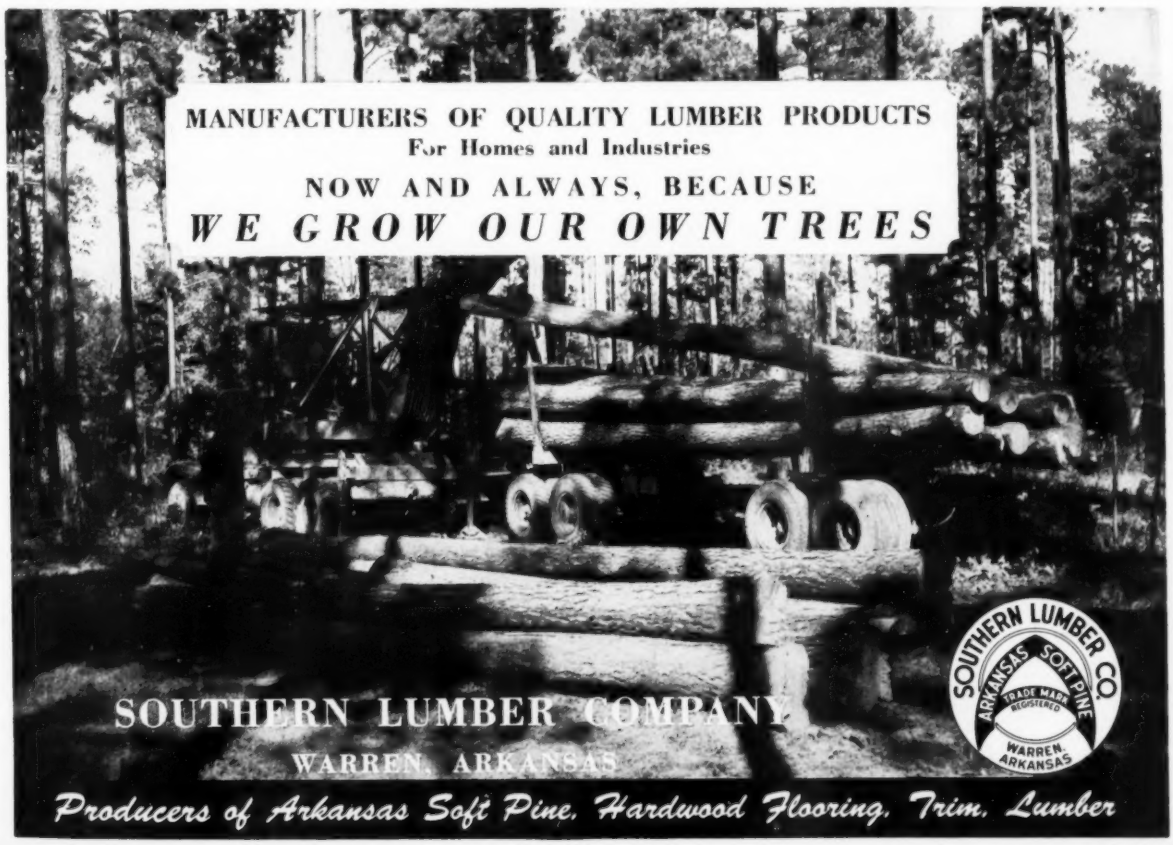

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Olympic Park—Yes

(*From page* 92)

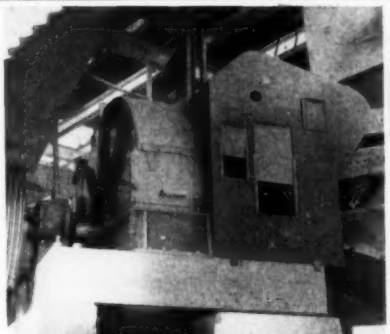
means as will leave them unimpaired for the enjoyment of future generations." Many park enthusiasts wish to keep the resources in as nearly primitive state as possible. Hence, following the law and park policy, no hunting is allowed, and few roads or trails or campgrounds are built. Principally, all that can be done in a park is to admire the scenery and other resources to one's aesthetic delight. This is not stated to belittle the very real pleasure, the thrill and the excitement which such adventure may bring. It simply is to point out the tremendous investment necessary for a single use of the resources.

Another consideration bearing upon the cost of the restricted use of this great asset is the limited season of the year in which it may be enjoyed. Over most of the western half of the park there is an annual rainfall of 100 to 150 inches. Only in about three months of the summer is there much chance of good weather, and even then there may be intervening fog to spoil the scenery. Commercial use of the rain forest, however, can proceed all through the year, but tourist use with any degree of pleasure and comfort is limited to less than three months of the year.

Another consideration is the big game resource of the Olympic Peninsula. Hunting elk, deer and bear is an important recreational use of the lands of the Peninsula, but this must all be done outside the national park since no hunting is allowed inside the boundaries. Statistics collected by the Institute show an elk population on the Peninsula of 8000 with a kill in 1952 of 569, and a deer population of 37,000 to 40,000 with 1952 kill of 8534. The report describes the value for game propagation of intermittent logged off areas and forests, and indicates that vast areas of continuous forest, as in the park, shade the ground and the game herds gradually are reduced in numbers. Thus the park is restricting a game crop that might provide much increased enjoyment to many more people.

As a final consideration, there might be cited the recommendations from two different field studies of park size by experts. The first, in 1935, was by four field officials of the Department of the Interior. The

signatories to this report were Preston P. Macy, the first superintendent of Olympic National Park; George A. Grant, chief photographer, National Park Service; O. A. Tomlinson, then superintendent, Mt. Rainier National Park; and David H. Madsen, wildlife expert. This report was made part of the record in public document #71635 and is also part of the record in the Congressional hearing pursuant to House Resolution 93 dated September 16 and 17, 1947. This recommendation was for an addition to the west of the Olympus National Monument of 100,000 acres making a park totaling about 420,000 acres. This report was submitted after the Wallgren Bill for a large park had been introduced in Congress. Another expert field study was by J. W. Girard, a consulting forester and a nationally recognized authority, whose recommendations also are of record in the 1947 hearing. Mr. Girard had previously acted as consultant in the establishment of five of the national parks of the nation. His recommendation was for the transfer to national forest status from the present Olympic National Park of 230,000 acres of commercial forest land of low scenic value containing 9,752,000 M board feet of



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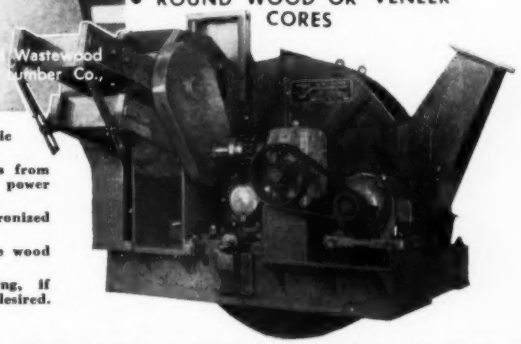

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timber. His recommendation would still leave in the park nine billion feet of timber, very large examples of the "Rain Forest," all of the scenic areas, and a total acreage of 666,000 acres, which is practically the same as original area established in the Wallgren Act.

In conclusion, it seems apparent that a calm, unbiased appraisal of these ten considerations will conclusively indicate an affirmative answer to the question "Is the Olympic National Park too Big?"

What, then would be a practical solution of the problem? The present park boundaries were hastily drawn with little or no field examination. Hence, there appears to be no threatened wanton destruction of natural resources, no fundamental objection, no sacrilege, no precedent created in reconsidering the boundaries.

In seeking a solution of the problem, the first consideration should be given to people and their desires. It has been said that there are three types of visitors to outdoor areas. They all enjoy the wonders of nature and, in particular, the beauties of magnificent trees. These visistors could be grouped into three classes: the first includes nature lovers who

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wish to get out into primitive wilderness areas, and those vigorous mountaineers who wish to climb into the high areas and drink in the glories of the panoramic scenery; the second class includes those who wish to drive on improved roads and stay in comfortable resorts; the third class includes campers, hunters and fishermen who enjoy the relaxation which comes from moderate isolation which can be obtained a few miles away from the main traveled roads.

The interests of the first class will best be cared for by national parks, but those of the other two classes will best be served by less restricted recreation. For the first class, there is a national demand for a national park of large size, replete with all of the wonders of nature. Hence, the Olympic National Park should first of all include the 389,000 acres comprising the high mountains, the meadows, the glaciers, the crags and the alpine forests which surround them. Then there should be included below those high mountainous areas some medium and low elevation forests.

The other two classes of forest visitors will want less restricted recreation than legally can be provided in a national park. For these visitors, the areas not required for primitive wilderness use should be turned back by Congress to the jurisdiction of the U. S. Forest Service which administered them for many years prior to the date that they were included in the park. Such areas to be turned back would largely be on the west and southwest sides of the park where the great areas of commercial timber are located which have negligible scenery interest.

These areas would then be administered under the forestry multiple-use policy of the U. S. Forest Service. This would mean that only the sustained-yield volume of timber would be harvested with the result that only a comparatively small area would be cutover annually. The cutover areas immediately would be reforested so that such logging would only be visible for about 15 years before the young growth would blot out the stumps. Incidentally, 35 percent of the large revenues accruing from the Forest Service sales would go to the counties.

With this solution of the question, vastly increasing numbers of visitors would come to this region, and each in his own way would derive the fullest enjoyment of the heritage which we have in our Olympic National Park and in our Olympic National Forest.

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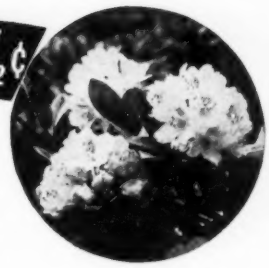

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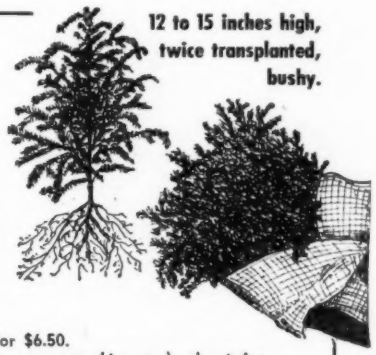

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Olympic Park Too Big?—No

(*From page* 31)

United States Code, by which the National Park Service was created within the Department of the Interior. Pertinent language is quoted here from Section 1 of Title 16, as enacted in 1916, when the National Park Service was established:

"The service thus established shall promote and regulate the use of the federal areas known as national parks, monuments and reservation hereinafter specified, except such as are under the jurisdiction of the Secretary of War, as provided by law, by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Clearly then, national parks are established to preserve the lands encompassed within them, both in their natural state, and permanently for the enjoyment of all future Americans.

Finally, similar language is found in the statutes dealing with Olympic National Park itself. The park was created in 1938 by a law which is now found in Section 251 of Title 16, which says that certain lands described in the statute—

". . . are hereby reserved and withdrawn from settlement, occupancy, or disposal under the laws of the United States and dedicated and set apart as a public park for the benefit and enjoyment of the people . . . ."

Congress later (in 1942), passed a law empowering the Secretary of the Interior to make rules and regulations for the management of Olympic National Park, and—

". . . for the protection of the property therein, especially for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities, or wonderful objects within the park, and for the protection of the animals and birds in the park from capture or destruction, and to prevent their being frightened or driven from the park . . . ."

It is implicit in this language that sufficient area must be preserved so that the animals may range peacefully within the park, and not be driven outside of the boundaries. This latter point is particularly important with respect to the great herds of Roosevelt elk, which require both highlands and lowlands for their natural range. Nor are mining interests to attack the mineral deposits.

Within the context of these laws exists the more important, and largely unwritten, concept of wilderness areas to be preserved for future generations of Americans. More of the United States is now paved than is encompassed within all the national parks combined. The history of the development of this country, wonderful for its vigor as the population pushed westward, is sorrowful for the ruthless destruction and waste of all sorts of natural resources. Surely the time has come to preserve, even from the invasion of the automobile, the few trifling areas which are left unimpaired in the national parks and in certain wilderness areas in the national forests.

This is particularly necessary where a national park is designed to preserve a variety of features, none of which can be properly appreciated except as a large single entity. Opponents of the park have long argued that strips of virgin timber along river bottoms and roads are an adequate substitute for preserving a large part of the Rain Forest in one piece. This argument has been the gist of the so-called Cleator plan, urged by Olympic Peninsula lumbermen for the last 20 years. But no such plan preserves the Rain Forest in its whole magnificent cycle of birth, growth and decay. Nor does it serve to preserve the whole range of the Roosevelt elk and the other animals and birds.

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Again, the lumbermen have long argued that "over-ripe" trees should be harvested and not left to rot. These opponents of the large park do not or will not see that this ripening and decay is part of the natural cycle which has been essential to the very existence of this unique forest. No other coniferous forest in the world offers the size and variety of trees now found in Olympic National Park, which contains the largest specimens of the Douglasfir, Sitka spruce, western red cedar and western hemlock. When Captain Vancouver first saw this forest from the ocean during the last decade of the 18th century, and when he later explored it from the Puget Sound side after his party came into the Sound, he, like his officers and his scientists who have left records, marveled at the beauty of the forest. Yet neither lumbermen nor silviculturists were then caring for this forest, nor taking out the "over-ripe" timber! This forest has cared for itself for thousands of years, and it can only care for itself, and resist both fire and insect infestations, when a huge contiguous area is left untouched, uncut by roads and unharvested by man.

The vast growth of the American population is no more remarkable than the increase in its leisure time. It is reasonable to expect that the tourist business will continue to increase vastly in value, especially in the states of the Pacific slope. The tourist industry is now, in point of dollar value, the second industry of the state of Washington. Preservation of a large Olympic National Park is therefore not only esthetically and historically sound, but economically desirable. Opponents of the large park have falsely said that there is no easy access into the heart of the park. The contrary is true. Several million dollars have been spent or earmarked for the development of a new road up Hurricane Ridge, at the north end of the park, by which any tourist can reach an altitude of more than one mile, make headquarters at a modern lodge, and see magnificent alpine meadows as well as the forest. Other access roads enter the park from all compass points.

But even if no assurance could be made that the dollar value of the tourist — whose dollar is easier to harvest than a dollar locked up in a large tree — increases each year, it would be morally and historically right to recognize the ancient prin-

(*Turn to page* 102)

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Feature Photo of the Month

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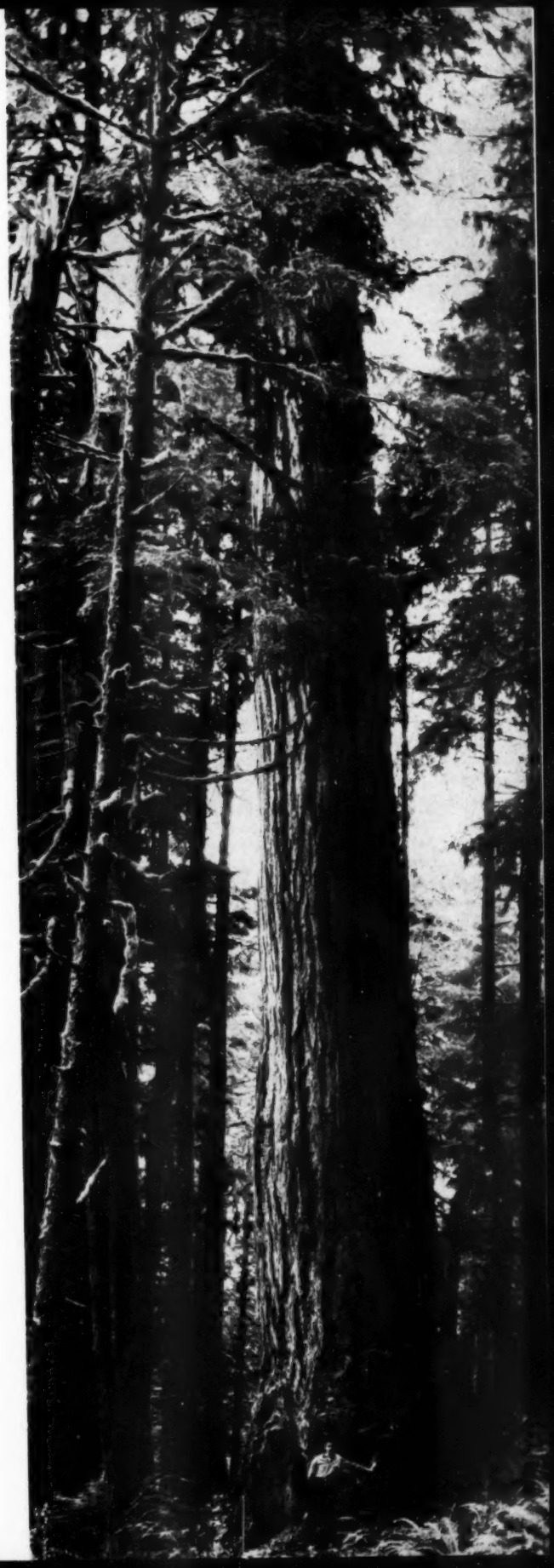

This mammoth Douglasfir, the world's largest according to the Crown-Zellerbach Corporation, is located on that firm's Clatsop Tree Farm in northeastern Oregon. Growing in an attractive park created for the public by the company, the 1000-year-old tree is slowly regaining vigor after severe looper attacks.

Olympic Park Too Big?—No

(*From page 99*)

ciple that man does not live by bread alone. The argument that the Olympic National Park contains large trees which are worth many dollars is on its face unanswerable. So is the argument that Central Park, in New York, is worth a great many tens of millions of dollars for residential and commercial real estate development. When our American people are prepared to subdivide Central Park, they will be prepared to cut up Olympic National Park also, but the nation will no longer have the same set of values which has made it grow and endure.

Notice must now be taken of the approach made over the years to this question by opponents of the large park. It is extraordinary that some opponents are still crying that no adequate study of this question has been made. No national park or monument in our entire history has had its boundaries considered, studied and argued about as extensively as Olympic National Park. Reference has been made to two early bills to establish a park or wilderness area on the Olympic Peninsula. The Olympic National Monument was established in 1909 by Proclamation of President Theodore Roosevelt. It was a large monument, very close in size to the boundaries established almost 30 years later. Opponents of the park conveniently forget that three different Presidential Proclamations thereafter cut the monument in size by one-half, while it was under jursdiction of the Forest Service. The monument finally came under National Park Service administration in 1933, when less than 300,000 acres were left. Several bills were introduced into Congress during the '30s to establish a national park. Very extensive hearings were held in 1936 on Congressman Wallgren's bill, H.R. 7086. When the park was established in 1938, the President was specifically authorized by Congress to add to the area of the park, up to defined limits, by Presidential Proclamation. This statute was the source of the action of President Truman, much complained of by the lumbermen, in adding the last permissible area to the park early in 1953. The park is now at full size—about 900,000 acres.

But the opponents of the park have kept introducing into Congress bills for reduction in its size. Another extensive hearing was held by the Public Lands Committee of the House of Representatives, sitting on the Olympic Peninsula, during the summer of 1947. And since that time Governor Langlie of the state of Washington, a long-time and ardent enemy of the park, has established a committee of his own to "study" the boundaries. Although many months has elapsed since this committee completed its study, the Governor's hand-picked majority has come out with no published report or recommendation other than that the Secretary of the Interior appoint *another* committee to make a *further* study!

For almost 20 years various self-styled citizens' committees, arising in the lumbering communities on the Olympic Peninsula, have deluged citizens and Congressmen alike with slick-paper, full-color propaganda against the park. Most of the daily newspapers of the state of Washington have taken the same line, with the single notable exception of the daily paper in the Olympic Peninsula lumbering town of Port Angeles. The wonder is that, with the money, publicity and powerful figures lined up against the park, it has survived these many attacks. Perhaps the answer is that right is on the side of the conservationist and the friends of Olympic National Park.

The primary argument against the large park has been that the communities upon the Olympic Peninsula, dependent on the lumber industry, need the old-growth virgin timber in the park to sustain their economy. The population of the twin cities of Aberdeen and Hoquiam, in the heart of this lumber area, declined steadily for more than a generation before Olympic National Park was established. Since that time the population of these cities and of Grays Harbor County has been growing. Opponents of the park have now pretty well agreed that about 250,000 acres should be cut out of the park on the west side, this acreage to yield about 150 million board feet annually for the mills of the area. But what is the necessity for this yield? The Olympic Peninsula contains commercial forest land outside of the park amounting to more than two and one-half million acres. About two million acres is classified as site III land or better, wonderful forest land with an unrivaled growing rate, averaging 1200-1500 board feet per acre per year. Most of the site I and II land is at lower elevations, in state and private ownership. Yet an acknowledged expert, Burt Kirkland, making a recent study at the instance of the West Coast Lumbermen's Association, has indicated that almost 700,000 acres of this land is poorly stocked or denuded. And much of the sawtimber in this area outside the park is rotting for lack of access roads or because of a depressed log market. Kirkland has estimated that loss by mortality in old growth must be more than 300 feet per acre per year.

For more than 20 years the state of Washington has owned its largest single forest stand, State Sustained Yield Forest No. 1, on the Olympic Peninsula. This tremendous reserve of old-growth timber has never been exploited. As recently as the end of 1953, a distinguished authority in the forestry field, many times a spokesman for the lumbermen, was unable to state why this forest had not been developed. This occurred in a debate between the author and Colonel W. B. Greeley, vice-president of the West Coast Lumbermen's Association. This huge state forest contains about six billion feet of old-growth timber, for which buyers are still being sought in vain by the state of Washington.

Even if the lumbermen were successful in obtaining the timber they now want out of Olympic National Park, the people of the United States have no assurance whatever that this would be the end of these demands. On the contrary. At the Congressional hearings held on this question in 1947, the chosen spokesman of the lumbermen was James W. Girard. He stated, in answer to a Congressman Fernandez' question, that not only was there no assurance that the lumbermen would not later ask for further withdrawals from the park, but that such requests might come within four or five years! Even if this timber were withdrawn, the entire history of logging practices in the area, and the necessity of using clearcut methods in this rugged terrain, indicates that sustained-yield operation would not be possible.

To summarize, then, friends of Olympic National Park make the following points. All national parks belong to all the people of the United States, and are not to be tampered with for the benefit of a few thousand contiguous citizens. All national parks are to preserve within their boundaries all of the won-

ders contained therein, and legislation establishing this park in particular is most emphatic on this subject. Size and boundaries of Olympic National Park have been studied by Congressional and other groups for half a century, and have received attention unparalleled in the history of our system of national parks. The pressures of an expanding population make it more important than ever to preserve the few remnants of wilderness areas.

Conversely, the friends of the park can show, exclusively by the use of statistics furnished by the various associations of lumbermen, that all the timber which will ever be required to sustain either saw or pulp mills on the Olympic Peninsula can be derived from timberlands in state and private ownership on the Olympic Peninsula. This last point cannot be emphasized too strongly.

Documentation of all the statements made in this article can be furnished. The author, who desires to acknowledge his debt to all the conservationists and friends of Olympic National Park who have fought this battle far longer than he, particularly recognizes the help and work of his father, Irving M. Clark, and of John Osseward, Secretary of Olympic Park Associates, Inc.

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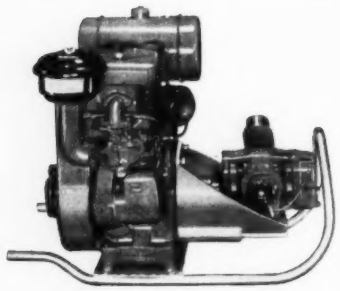

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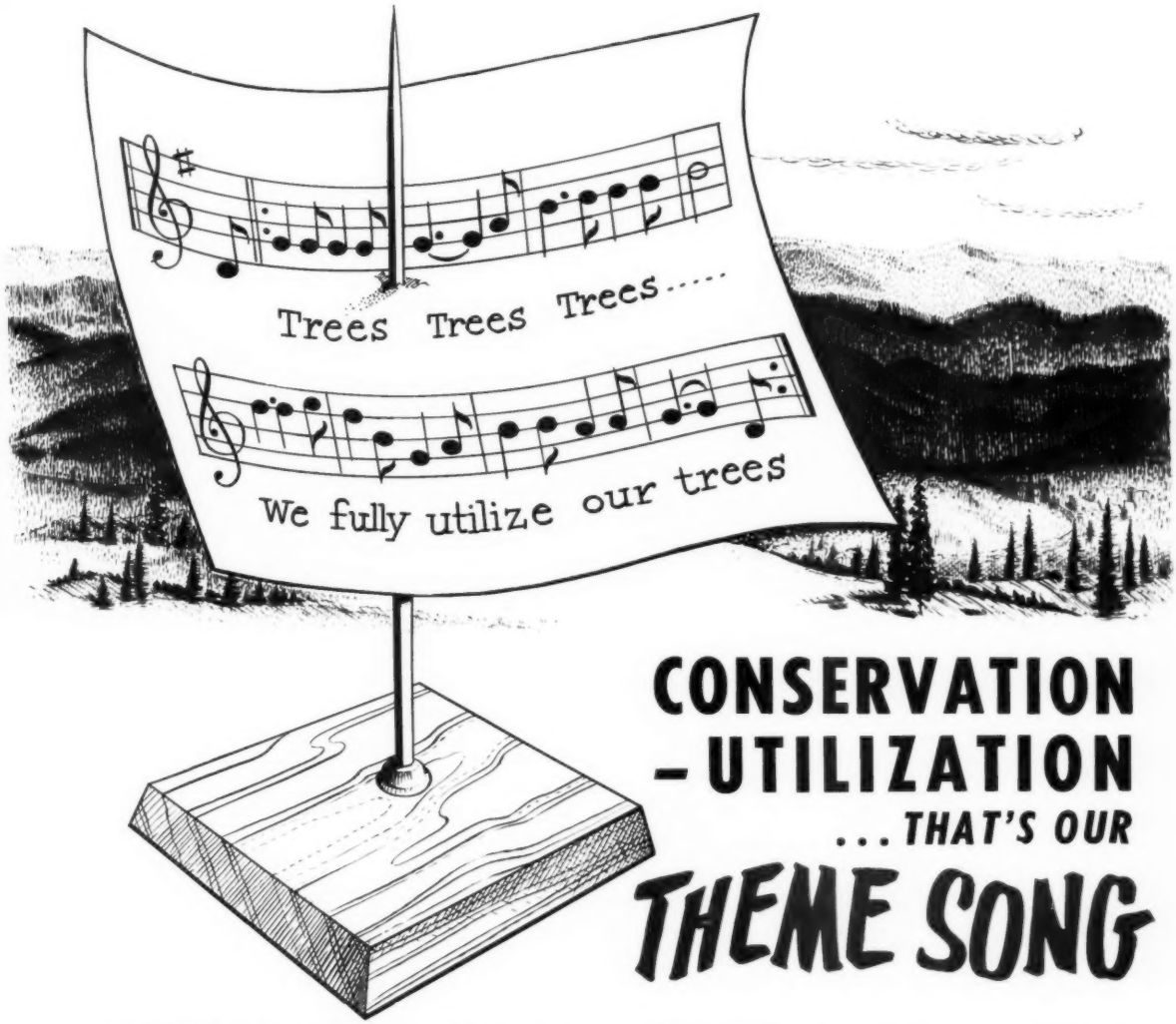
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